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Original Articles

The Physiology and Pathology of the Blood in Relation to Surgery*

MAYO LECTURE IN SURGERY
(University of Michigan.)

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The seventeenth century, through the achievements of William Shakespeare in the world of letters, and of William Harvey in the world of medicine, was one of the great periods in history.

In the world of medicine, the discovery of the circulation of the blood was only one of the epochal contributions made by Harvey. He was the first to apply methods of research to physiology. He introduced experimentation under controlled conditions, which made the results applicable to disease conditions in man. It is surprising, when one examines his work, after nearly three centuries, to find that his methods of experimentation were accurate and commendable. When we consider that Harvey stood alone among his contemporaries, that from his own mind came all that he accomplished, we can better appreciate his vision and courage.

Harvey not only established methods of physiologic research, but also introduced the idea that form followed function, in contradistinction to the view generally held at that time that form controlled function. In his study of the heart, for example, he pointed out that the pericardium is not merely a sac which enables the heart to act smoothly, but a protecting agent. He showed that, in times of great stress, when the musculature of the heart is stretched to the point of its physiologic endurance, the pericardium restrains its further dilation and prevents serious injury to the musculature, a point of view which has only recently been accepted.

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For two centuries comparatively little was added to Harvey's conception of the blood stream, but in the middle of the nineteenth century sound contributions were made to a knowledge of the blood in its relation to disease. Addison, in 1849, described a disease of the supra-renals which has been given his name, and ascribed the circulatory asthenia to failure of the suprarenals to function. In 1855, in a few short pages, he gave a lucid description of the pernicious anemia which has never been excelled.

One might pause here to pay homage to Guy's Hospital, in England, which was the laboratory responsible for so many revolutionary discoveries in medicine. Addison worked here, and Bright, in 1827 and in 1839, illuminated the various forms of nephritis here; the full significance of Bright's work has but lately been appreciated. Hodgkin, whose name is an eponym of the lymphatic and splenic dyscrasia of which we know so little, made observations in the wards of Guy's Hospital, which resulted in his description of this syndrome. Wilks, who represented the beginning of a sound clinical understanding of diseases of the central nervous system; Hilton, whose monograph on rest and pain my father considered one of the greatest contributions of his generation; and Fagg, whose work on medicine correlated so wisely clinical and pathologic data, were but a few of the eminent workers of by-gone days in Guy's.

We have thought of the blood as an organ which contains cellular elements circulating in a liquid medium called the blood plasma, but only recently have we begun to understand what a complex fluid this is. Through physical investigations with the microscope, the formed elements in the blood have been oriented and their relation to certain pathologic conditions established. These formed

elements are the white cells, the red cells, the blood platelets, and various morphologic modifications of these elements. The accepted ratio of 5,000 white cells to 5,000,000 red cells, and from 225,000 to 400,000 blood platelets to 1 c.mm. of blood, is merely a statement of averages, which at the present time we call normal. With the high-powered microscopes of today, it is possible to see particles as minute as 1/10 micron or 1/250,000 inch in diameter. Perhaps our minds have been diverted from the main consideration by the multiplicity of variations in cells which have been described by many investigators using the microscope.

In the embryo, the reticulo-endothelial and lymphoid organs take part in the formation of the blood; the liver and spleen until the fifth month are sources of the cellular elements of the blood. There are many reasons for the belief that the white cell is the primitive blood cell. The blood of invertebrates contains no hemoglobin and is therefore transparent, and yellowish or white. The amphioxus, a cordate which has been suggested to be the connecting link between the invertebrates and the vertebrates, is commonly said to be the only vertebrate with white blood. The primitive white blood cell is found in the fetus, and all the lower orders of life that have a circulating medium. Carrell, in discussing the potential immortality of living tissue which is provided with nutrition and whose waste products are removed, calls attention to the lymphocyte as a tiny, free-moving white cell which carries to fixed cells the essentials of growth, a function which is evidenced by the action of the lymphocyte in the healing of wounds. The lymphocyte not only is concerned with the healing of wounds, but is one of the chief defensive agents in infectious processes, second only in the superior phagocytic power to the large mononuclear white cell. The differential diagnosis of diseases which involve the white cell depends to a great extent on changes in the numerical relation, form, shape, and general characteristics of the white cell. Especially must the importance of the abnormal type of white cell, such as the myelocyte, be studied in the acute leukemias, and similar dyscrasias, in which the white cell count is often not so significantly increased as in the chronic leukemias. The white cell is nucleated and takes a prominent part in growth and repair.

We realize rather dimly the relation of the white blood cell to various diseases of a lymphoid character. Much of the evidence at hand is contradictory; for instance, that concerning the lymphosarcomas, and, more specifically, that concerning Hodgkin's disease, in which the earlier observers found leukopenia, but modern methods have shown that the disease is more often accompanied by a moderate elevation of the leukocyte count, from 10,000 to 12,000. In the acute infections, much valuable information is gained from a qualitative and quantitative study of the leukocyte.

In a general way, we know that the red blood cell is a descendant of the white blood cell. The blood of the vertebrates is red because it contains hemoglobin, and the hemoglobin, to each molecule of which iron contributes one atom, is carried by the red cell. Formerly it was believed that the red cells were completely renewed every seven days, but it is now known, through the work of Ashby of the Mayo Foundation, that the red cells may live for many weeks. The red cell conveys oxygen to the tissues, takes carbon dioxide from the tissues to the lungs for expiration, and in the lungs receives a fresh supply of oxygen.

It is surprising, considering the prime importance of oxygen, that the body does not have the capacity for storing oxygen or substances which will produce it under stress, especially as 47 per cent of the earth, the air, and the water, taken as a whole, is composed of oxygen. While the extremities of the body may be deprived of oxygen for several hours, with recovery, if the central nervous system, especially the medulla, is deprived of oxygen for from seven to ten minutes, death results. The processes of life are dependent on oxidation. From oxidation is derived heat, energy, and the power of growth. The red cells function, but have no nucleus and therefore no power of reproduction. There are certain evidences from analysis of the function of cells that the nucleus is largely devoted to growth, and the cytoplasm to function. In the cancer cell, the nuclear elements are extraordinarily active and large in proportion to the cytoplasm. The more predominant the nuclear elements of the cancer cell are over the cytoplasm, the more malignant the neoplasm, and when the cytoplasm does not differentiate and afford evidence of physiologic activity, the cell is highly malignant, because all of its oxidizing power is converted into growth without function, at the expense of the controlled oxidation of the normal cell. This question of oxidation in relation to disease of the blood must receive intensive investigation. In the anemias, blood transfusion clearly demonstrates the value of the carriers as a temporary aid to rehabilitation.

In the future, a most fruitful field for

study should be the varied conditions which lead to the development of the anemias. At present we recognize pernicious anemia with certainty only when it approaches a terminal stage. Is it merely the end-result of a number of processes which interfere with the normal formation of red cells?

Investigations with the ultramicroscope of the minute constituents of the blood cells are leading to new views concerning the pathology of the blood, and will eventually assist in a better correlation of conditions of the blood plasma, and of the stability and function of the cellular elements of the blood.

Rockwood, of the Mayo Foundation, has had interesting results in his research on hemolysis. Under the ultramicroscope the normal red corpuscle appears as a very bright ring of light around a dark center. As the cell hemolyzes, the bright ring fades to a dull gray rim surrounding the stroma or "ghost," but under proper conditions the reverse phenomenon of Brinkman can be produced; that is, hemoglobin may re-enter the cell. Methods of investigation along physical lines are most important, but it is not easy for us to accept a physical explanation for the so-called vital phenomena, and it is especially difficult for morbid anatomists to throw away their conceptions based on dead cells and accept the facts which living cells reveal.

The relation of the blood platelets, which are derived from the megakaryocytes of the bone marrow, to blood clotting and the purpuras, has become evident, as well as the agency of the spleen in the destruction of blood platelets, which may cause a drop from a normal count of from 225,000 to 300,000 or more to 40,000 or less, causing chronic purpura in which splenectomy has given striking curative results.

We begin to look on the spleen in a new light. As one of the reticulo-endothelial tissues it appears to act as a lymphatic filter of the cellular elements of the blood which have outlived their usefulness, and is a limited source of white blood cells. The spleen is a destroyer of worn-out red blood cells, and if it is enlarged, it may, by an increased destructive activity bring about anemia. In pernicious anemia, the spleen perhaps acts normally as an executioner of red cells of reduced value which, however, are capable of maintaining life and are the best the bone marrow can produce. These facts have not been sufficiently correlated with the secondary anemias, but we are beginning to see the destructive effects of infectious and chemical toxins on the red blood cell, causing changes in its form, its hemoglobin content, and its ability to carry oxygen to the tissues.

We can look on the vascular system as channels for transporting cellular elements in a liquid medium, the blood plasma. Until recently, our knowledge ended there, but today, through physicochemic studies, we are learning much concerning this problem. We see the blood plasma carrying nutrition to all parts of the body, effete substances, which are to be eliminated, to the emunctories, and chemical substances, spoken of as internal secretion which co-ordinate the fundamental vegetative functions, and finally, assist in returning carbon dioxide to the lungs for exhalation. Krogh has shown that the walls of the vascular capillaries contain contractile cells, derived from the nonstriated muscle, which are to a large extent self-controlled. Under the circulatory presure of the systole of the heart, the capillaries permit oxygen and molecular substances, such as the crystalloids and amino-acids, to pass by filtration, osmosis, diffusion, and other forces, through the stomas in the vessel wall to serve vital purposes; nutrition, heat, and energy. When certain toxic poisons, for example, histamin, paralyze the contractile cells, causing the stomas in the capillary wall to open more widely, larger bodies, such as the colloids of the blood plasma, pass from the capillaries into the tissues resulting in the condition known as shock.

These colloid substances are too minute to be seen with a microscope; they vary from 1/10 micron or 1/250,000 inch in diameter to 1/1,000 micron, approximately 1/25,000,000 inch in diameter. Knowledge of the colloids comes through the fact that the colloid molecules are larger than a ray of light, and that with the ultramicroscope they can be seen to reflect the ray of light. Up to 1/100 micron or 1/2,500,000 inch the ultramicroscope determines the presence of the colloid bodies, but gives no idea of their size, shape, color, or other significant details. Particles less than 1/1,000 micron in diameter lie in the molecular and atomic field, in which chemical changes take place. The study of the blood could be brought only to a certain point by the use of the microscope. The development of the ultramicroscope, which extends our methods of physical approach, has opened new and enormously fruitful fields for the investigation of colloids. Colloids concern life itself.

Sir William Bayliss has well said that the dividing line between physics and chemistry has disappeared, that only under certain physical conditions can there take place the electric exchange of electrons and protons in the atomic field.

According to Bohr, the atom is composed of a positive nucleus, or proton surrounded by a negative electron or electrons. The simplest atom is that of hydrogen, composed of one proton and one electron, the latter being in rapid motion around the proton. Henry Moseley, a

talented young Englishman who was killed in the Gallipoli campaign at the early age of twenty-eight, analyzed the atom by the refraction of the X-ray, an electromagnetic vibration only 1/100,000,000 inch in length, smaller than the atom. He demonstrated that there are ninety-two possible elements between hydrogen, the lightest, and uranium, the heaviest, and that between each two elements in the progression in atomic weight, there is approximately the weight of one atom of hydrogen; that is, an atom of oxygen has 16 protons and 16 electrons, an atom of gold 79 of each, an atom of mercury 80 of each, an atom of radium 88 protons and 88 electrons, and an atom of uranium, 92 of each. It is interesting to note that Miethe has succeeded in removing one electron from mercury, converting it into gold. As a result of Moseley's work, Rutherford Thompson, and others have been able to fill in all but four of the elements lying between hydrogen and uranium. Many elements are not stable, or contain more than the necessary number of protons or electrons, and these superfluous, easily loosened, or free, electrical units are called ions, and are responsible for the atomic changes which we speak of as chemistry.

It is in the atom and molecule that oxidation takes place and structure is altered. Crystalloids, of which glucose, derived from carbohydrates, is a good example, lie in the molecular field as do the amino-acids, which are the final results of protein metabolism. We now know that these ultimate products are formed in the liver, for, as Mann has shown by animal experimentation, if the liver is removed, sugar and urea in great part disappear from the blood.

The newer methods being applied in the study of the blood are physical. The elimination of various dyes from which much valuable information has been brought out by Rowntree and others, as Evans has shown, is largely a filtration phenomenon.

Compare the knowledge of the quantitative derangement of the function of the liver and kidney, which has come through the study of the blood with that which was obtained from the study of the excreta. One must realize that contamination, fermentation and bacterial action of excreted material did much to obscure the older field of study and to interfere with the proper understanding of the function of these organs. Compare the limited information concerning elimination of urea, yained from examination of the urine, with the splendid knowledge obtained by the present-day study of the blood urea. As a result of this newer knowledge, the uremic patient may be so well prepared that operation can frequently be performed safely in many types of cases which were formerly accompanied by a high mortality.

This discussion may seem ultrascientific and impractical, but on the contrary, it is most practical. Today, precise examinations of the blood for reactions which concern the colloids and molecular and atomic substances, have been raised to the dignity of sound methods of securing information concerning vital phenomena.

Let us take as an example, examinations of the blood in relation to the kidney. The function of the kidney may be briefly defined as the filtration of non-colloid constituents of the blood plasma through the capsule, and the resorption of threshold bodies in solution through the tubule cells. The kidney is, therefore, chiefly a filter, whose function is to eliminate from the blood certain metabolites, such as urea, chlorids, and creatinin. Urea is one of the smallest of the molecules and is not hydrated, that is, it does not change in size by absorbing water. We know that the urea molecule must be about the size of the molecule of the dye, phenolsulphonephthalein, which Rowntree has shown by intravenous injections would be eliminated from the blood through the kidneys about as urea would be eliminated. The Rowntree and Geraghty phenolsulphonophthalein test is an accurate guide to the functional capacity of the kidney to eliminate urea. Retention of chlorids in the blood, through disturbance of renal function, results in the edemas. Creatinin is another waste material excreted by the kidneys. Estimation of these substances in the blood affords the most reliable prognostic index to renal function.

Finally, the kidney eliminates excess water in order to maintain a proper physical state of fluidity, that the colloids and molecular constituents of the blood plasma may be maintained in the condition necessary to permit chemical exchanges. Eighty per cent of the body is composed of water.. Colloid bodies can be seen only by refraction with the ultramicroscope and are held in suspension in fluids, while molecular and atomic particles form true solutions, which according to Arrhenius, may undergo electrolytic dissociation into positive and negative parts which constitute the ions.

Through studies of the blood has come the remarkable improvement in results from operations on patients with reduced renal function. Such improvement could not be estimated by the old method of examining the urine. When the blood urea rises above 125, an operation carries a very serious risk. The well prepared patient may recover from operation, provided the urinary obstruction can be relieved as in certain conditions of the prostate, even when the blood urea exceeds 300. When the blood creatinin rises above 5, a serious barrier to excretion is present, and the patient is in danger; when it rises above 10, the patient will probably die, unless the barrier is removed. The per-

centage rise and fall of the blood chlorids must be watched with care, but are not so striking as in the case of urea. If there is grave retention of blood chlorids, edema may occur. In cases of high intestinal obstruction, the chlorids of the blood fall markedly. This is frequently associated with an alkalosis and its clinical manifestations.

If the renal function, in relation to elimination of urea, chlorids, and creatinin, is so reduced that the urine cannot concentrate normally, a large intake of water is necessary. That is, if the urine normally is excreted in a concentration of 1.020, and the kidneys are able to concentrate only 1.005, the patient must take extra water to insure proper elimination through the kidneys. If the renal incompetency is in the stage of cardiac insufficiency, the patient may not bear the amount of water necessary for elimination, and a secondary edema may develop from this cause. Measures must be taken to obviate this cardiorenal complication. Under intelligent management, improvement in the condition of a patient with most serious toxemia from renal insufficiency may be brought about by the use of sufficient glucose, sodium chlorid solution, administered, if necessary, intravenously. The glucose maintains heat and energy in the body, and reduces the metabolites in the blood by preventing destruction of tissues. If the blood chlorids are high, water without sodium chlorid is indicated, but as a rule they are low, and large quantities of hypertonic sodium chlorid solution are given, if urgent, intravenously.

When acute intestinal obstruction is produced experimentally in a dog, the animal usually lives not more than a few days; but, when in this condition, if he is given intravenous injections of glucose and sodium chlorid solution at intervals, he may possibly live thirty days. This experimental condition in the dog approximates high intestinal obstruction in man. In the toxemia of high intestinal obstruction, acute dilatation of the stomach is a prominent feature.

Without regard to cause, a definite treatment should be established to relieve the shock, dehydration, and vomiting, from which so many of these patients die. On examination of the blood it is found that the normal urea blood content[26] of the patient has greatly increased. The plasma chlorids, which should be from 560 to 650, are greatly reduced. The plasma carbon dioxid volume per cent normally from 56 to 65, has increased, and when above 100, tetany is likely to develop.

The indications are fulfilled by introducing by rectum, subcutaneously, or intravenously, water, glucose, and sodium chlorid. If the patient is very ill, the intravenous method is certain and speedy. A liter of water containing 1 per cent of salt and 10 per cent glucose, twice or three times a day, is so effective that patients apparently moribund often improve so greatly in a few days that an operation, if necessary, can be performed safely. The stomach must be kept empty by gastric lavage. Even in the mechanical obstructions, great improvement can be brought about by these measures. In many cases a jejunostomy, as a temporary measure, may be required in addition to evacuate the intestinal contents, accumulated owing to obstruction, and for feeding the patient later. My colleagues, Balfour and McVicar, have made practical use of these measures with great success.

Examination of the blood sugar and careful preparation for operation permit the diabetic patient, as shown by Wilder, to be operated on almost as safely as the patient without diabetes. Sugar is a threshold substance and the threshold varies greatly in height in different persons. The person with a low sugar threshold, who takes an undue quantity of glucose or glucose-producing carbohydrates, may pass sugar in the urine. This type of glycosuria is called renal diabetes and is considered of little significance. Another person with a high sugar threshold may have no sugar in the urine, but an increased blood sugar content, sometimes accompanied by a carbuncle or a succession of boils. Infection greatly decreases the sugar tolerance and the patient with mild diabetes may be the one to develop coma following an operation. The higher fatty acids cannot be properly metabolized by the diabetic patient without carbohydrates. Such patients should have plenty of sugar, at least 100 gm. each day for several days before operation, and at least 50 gm. each day after operation, sufficient insulin being used to maintain tolerance.

We associate the formation of the white cells with the reticulo-endothelial organs, the red cells with the bone marrow, the blood platelets with the megakaryocytes; we must associate the blood plasma with the liver. Until recently we have known little about the function of the liver, but now, by means of the tetrachlorphthalein test of Rowntree and Rosenthal and by certain other methods, we are able to measure the degree of derangement of hepatic function fairly accurately. That the liver is essential to life, and that it has the greatest power of regeneration, through hyperplasia, of any organ of the body, has been proved. Mann has shown that, in the dog, 70 per cent of the liver can be removed, with regeneration of the organ in fourteen weeks. The liver controls the final steps in the conversion of the carbohydrates into the sugar necessary for the heat and energy of the body; it converts the amino-acids into substances suitable for utilization by the body, and stores fats in a form usable by the body.

With regard to the formation of the bile in the liver, while Whipple and Mann have shown that bile pigments are not all produced in the liver, they have proved experimentally that the presence of bile in the intestine, which so often has been considered purely an excretion, is necessary to life. There is clinical proof that bile is essential to life, and that the passage of all the bile to the surface of the body eventuates in death. The surgical mortality in patients with jaundice who have been properly prepared has been reduced from above 10 per cent to less than 3 per cent, as shown by Walters. Intravenous restoration of the calcium chlorid exhausted by combination of the blood calcium with the bile pigments and salts rehabilitates the patient.

The liver acts on oxygen-poor blood. Eighty per cent of the blood in the portal circulation comes from the gastro-intestinal tract, and this is the source of supply of the nutritive material in the blood plasma. The remaining 20 per cent of the blood in the portal circulation comes through the splenic portion of the portal vein. The spleen filters out various elements from the general circulation, especially degenerated red cells, or those of low value, which it sends to the liver for metabolic action.

And now we find that the lungs have a glandular function. Roger, a French experimenter, in a few concise pages, with a single illustration, suggests that metabolism of much of the fat is accomplished in the lungs. The fat is carried from the intestinal tract through the thoracic duct to the left subclavian vein and finally deposited in the arterial capillaries of the lung, into which it finally disappears. He demonstrates that the blood from the right side of the heart contains a much larger amount of fat derivatives than the left. The experiment leads us to believe that oxygen is necessary for the conversion of fat, and that the conversion of fat into a form suitable for bodily use is not primarily a function of the liver.

The surgeon is vitally interested in the elucidation of these problems relating to the circulatory system. We speak of the four vital organs: the heart, the lungs, the kidneys and the brain. We study deaths following surgical operations, to find that the largest number are charged to pulmonary complications, and the next largest to the kidneys, while only a small number can be attributed to the central nervous system and the heart. Yet when we study the organ which has been charged with the death, we find very often that it was not primarily responsible, but merely the executioner.

We begin to see the liver as one of the great vital organs; and to realize that through its formation of the material which the blood carries to the tissues, the liver is acting constantly as a medium not only of physiologic activity, but also of possible pathologic exploitation. We are becoming aware that many of the deaths which we have so confidently charged to one of the four so-called vital organs have a deeper significance. From now on the blood stream will be a most fruitful source of investigation of the vital phenomena. The need for the future in the elucidation of the problems presented by the blood is not only fine analysis of morphologic conditions and of physicochemic factors, but also the ability to see the relation of the function of the blood to the function of the whole body without becoming lost in the multiplication of detail; this will require a man of vision like Adam Smith, who laid down principles in political economy which have endured.

So much for the studies of the blood connected with metabolism. What of foreign substances which have gained entrance to the blood stream? In this connection, a fifth function of the liver which must not be forgotten is that of the detoxication of poisons, such as chloroform, phosphorus, and arsenic, and the destruction of micro-organisms brought to it from the portal circulation. By examination of the blood for bacteria, severe types of infection can often be demonstrated, especially in cases of acute bacterial endocarditis. The presence of bacteria in the blood, however, does not always foretell the death of the patient, because the resistance of the tissues is an important factor. The use of mercurochrome by Young and Piper to kill bacteria circulating in the blood stream, opens a new and most promising field of therapeutics. And Abel, through his experimentation with dialyzation of the blood, has shown the possibility of removing various toxic substances from the blood by passing the blood stream outside the body through mechanical filters for cleansing and back into the circulation.

It is not my purpose here to discuss this subject in detail, but simply to call attention to the fact that our best means of studying many disease conditions is through the contents of the blood stream. By studying the blood, we shall steadily come closer to the origin of many disorders, and eventually, by earlier diagnosis, shall be able to remove from the blood stream the causative deleterious agents, and to restore the affected organs to a higher state of efficiency.

I have been privileged to see my colleagues, the internists and the laboratory workers, evolve methods of precision for examining the blood, and successfully apply the results to the rehabilitation of the patient whose condition formerly would have

precluded operation. This work has made possible one of the most striking advances in modern surgery.

HYPERTENSION

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This afternoon I am in the realm of controversy, and if I do tread where some have been hesitant, yet I shall try to find a precarious pathway without the fear that is oft attributed to a somewhat higher species than mere man.

I purpose invading the almost-dark continent of hypertension.

In the first place I base my discourse on the assertion that hypertension in itself is not a disease entity, but a manifestation of change which occurs with various disturbances of the whole cardiovascular apparatus. In any event it is not necessarily due to nephritis alone.

What might be considered high blood pressure in a man of sedentary habits, a man over 50, does not necessarily call for the S. O. S. signal in a strong, masculine, active person of the same age. The term hypertension is relative, and it is wise to keep this fact in mind.

We do not absolutely know today the cause of high blood pressure. Where there is high blood pressure, not obviously the manifestation of or secondary to any demonstrable cause, and I have the high blood pressure or secondary hypertension that develops in chronic or acute nephritis in mind when I say this, the condition is known as "essential vascular hypertension." It is a definite clinical entity. Sir Clifford Allbutt calls it "hyperpiesia." Like that authority, I decline to advance specific reasons for the immediate or ultimate cause.

It may be the result of infection, focal or general. Disturbance in the glands of internal secretion may or may not have bearing on it; it is often found at or about the period of menopause, and ovarian activity may provide the clue in many cases. Increased thyroid activity has been suggested, but though hyperthyroidism often causes hypertension, yet a patient in this group seldom shows increased metabolism as would be the case in increased thyroid activity.

Allbutt says: "The immediate cause is increased friction which must depend either on a narrowing of the arterial bed, or on an increase of viscosity; or, of course, upon a combination of these factors." Evidently Sir Clifford tempers his explanation with more than a modicum of the well known angelic apprehension!

Vascular lesion, some form of arteriosclerosis or capillary fibrosis, have been advanced as causation, but no sign of arteriosclerosis can be demonstrated in the early stages; the objective vascular lesions come later, and rather seem to be the result of long continued high pressure. Autopsies have revealed thickening of small arteries everywhere, but whether this was the cause or the result of long continued hypertension just cannot definitely be said.

Then there is the view, and it is a prevalent one, that nervous disturbances cause it. Possibly this deserves as much consideration as any opined cause. We do know that nervous influences raise the blood pressure, and that many patients with essential vascular hypertension are extremely sensitive to psychic disturbance, nor can we deny that it is the nervous, high-tension, incessant, against-time and-penalty, sort of work and life that induces premature old age, arteriosclerosis and its various effects, of which hypertension is the chiefest.

My view is that many factors probably play their part in causation. There may be one sole cause, or at least one of sevevral causes, but frankly, I have yet to see it segregated, identified and held up to the light of day and reason.

The majority of people with hypertension first show it in middle adult life, and up to about the age of 50. It is to be observed developing in early and late life, but not commonly so.

In order to understand the significance of hypertension, a knowledge of the physiology of the cardiovascular apparatus is necessary, and in particular a knowledge of those factors which determine the level of the blood pressure and its variations. Blood pressure is determined by the systolic output and the rate of the heart. During systole there is a sudden rise in blood pressure—the systolic blood pressure. During diastole no blood enters the aorta, but flows to the periphery and from the arterioles into the venous system. The pressure within the vessels during this process is known as the diastolic pressure. Systolic pressure has to be greater than diastolic pressure in order to open the valves and flood the aorta, and both pressures must necessarily be recorded in order to study circulation as a whole. The systolic pressure represents the maximum force of the heart and fluctuates more than does the diastolic pressure. The diastolic pressure measures the peripheral resistance and when low points to aortic insufficiency. When the two pressures approach, heart failure is in the offing.

It must also be understood that even under normal conditions the blood pressure is constantly undergoing alterations of level, and the heart rate, too, is variable, this to answer the needs of the body. These are merely natural physiological adaptations of the circulatory system. In making blood pressure estimations, the residual pressure is the final and accepted estimation, and it is the lower and more representative of the true arterial pressure.

Still, diastolic pressure is probably of equal,

if not more value in the whole pressure aspect. Hypertrophy eventually appears if persistent high diastolic pressure continues to burden the heart, then come thickening arteries, diseased tissue, and the perfect picture of pathologic hypertension. Blood pressure determinations are not to be made in the spirit of routine by any means. They are, moreover, by no means the *sine qua non* in diagnosis or prognosis.

The difference between the systolic and diastolic pressures is the pulse pressure, and normally the two pressures bear a certain relationship to one another. The pulse pressure expresses this relationship. For practical purposes we may accept a systolic pressure of 135 for men, and 128 for women, as the upper limit of normal, while the diastolic pressure, 90 may be taken as the maximum for normal adults. In those over 55 years of age, 140 systolic, may be considered the upper normal limit.

Granted a given case wherein a patient presents evidence of high blood pressure, we are faced with the following contingencies: we have to know whether it is the systolic or diastolic pressures, or both, that are abnormal; we must ascertain whether this elevation is temporary or permanent; we must set about to appraise the heart and arteries.

In aortic insufficiency, patients with exophthalmic goitre, and even after strenuous exercise, the systolic pressure is increased without a corresponding rise in the diastolic pressure. Bradycardia frequently presents a similar picture, as does heart block with no valvular lesion, and these pressures constitute typical systolic hypertension.

Then there is transient hypertension such as is observed in certain forms of angina pectoris. The pressure, both systolic and diastolic, is paroxysmal and in the intervals between attacks ordinarily reverts to normal. Acute nephritis shows similar pressures.

By far the largest group of patients with high blood pressure are those who may be classed under the category of essential hypertension that is persistent. You see the obese patient with no cardiac enlargement or renal disturbance. You see him for five or even twenty years without great change except a steady tendency of the pressure to rise to higher levels. Hypertrophy and dilatation of the heart, and sometimes mitral insufficiency, at last develops, and there usually is an accompaniment of headache, vertigo, shortness of breath, and sometimes slight swelling of the feet. Pressure readings are to be seen around 200 systolic and 105 diastolic. Typically well developed hypertension.

This picture is a common one; all too common, I venture to say, considering our scanty conception of significance, cause, and ultimate consequences. However, the issue must be faced; ours not to reason why, but to do as much as we can with the limited armamentarium at our disposal. Having discovered the symptoms, we must set about discovering what is back of it.

To restore the old equilibrium of pressures by treatment is entirely out of the question. The first thing to do is to learn as definitely as possible the stage at which the patient has arrived, and this is not a matter of one or two or three examinations. Rather, is it a continuous process of observation and intelligent interpretation of the patient's own experiences. You have all observed the patient in this condition. He has come to know there is something amiss with his blood pressure, and that his heart is not to be depended on as of old. He fears apoplexy; that he will die suddenly. His every action and effort is postulated on this contingency. He often tends to be hypochondriacal. Truly a sad condition. Such a patient needs wise handling and that always in a spirit of optimism.

The unfortunate fact of treatment in most cases of hypertension is that the prescribed regime is too often one of compromise. You see the man of many business enterprises, who carries a double load—his business cares and the increasingly dangerous high blood pressure. To turn his back on his affairs and definitely resign himself to irksome management of diet and habits to ameliorate the physical condition, is more often than not out of the question. Active men of affairs are seldom willing to pay the price where health is concerned. In other cases economic conditions may debar employment of the full and necessary course of treatment.

Diet is the foundation stone of all treatment in hypertension, be the stage early or late. The heart is always a trouble spot, yet the main duty is not so much to spur and stimulate it, but to endeavor to relieve it of its heavy burden. In most cases a reduction in the intake of food brings a lessening in pressure. Osler advised confinement to bed for a couple of months during severer reduction of the feeding, and invariably reported a moderating pressure. Alcohol is considered a strong contributory cause of high blood pressure, as is tobacco. Tea and coffee are known to be injurious in excessive amounts. It is all too easy to advise cutting them all out, but practical experience tells us that the middle course of moderation is apt to be most often followed.

There is the naturally abstemious patient, who, because of his very virtue, does not promise to give much response to dietary management. Yet, poor eaters have been known to be bad metabolizers, and in their case restriction of food intake often suffices for cure. Many of these patients are of sedentary habits with sluggish excretory functions, and these peculi-

arities are not unfavorable to the successful demonstration of curtailed dietary.

The authorities are at variance on the subject of diet. Brault advises against vegetables, while Huchard is just as strong an opponent of the meat ration. Allbutt adheres to the middle course, as indeed he consistently does in his whole discussion of hypertension. A mixed diet restricted rigidly as to protein content, and otherwise restricted to meet circumstances, seems to have served his purpose well. He expresses himself as disappointed with narrow dietaries. I believe his compromise to be thoroughly sound practice, while in addition I have found that to spend one day a week in bed is a valuable adjunct to any circumscribed dietary regime.

Fruits can be given without misgivings; highly seasoned foodstuffs are best avoided. In Europe the so-called Spa treatments have been advocated for many years and not without result, yet no special treatment of short duration can take the place of a systematic, well-thought-out, and rigorously carried out continuous regime.

Exercise must be advised with judgment. You are liable to start a train of untoward circumstances if you suddenly initiate unfamiliar and unexpected muscular exertion in a patient whose life has heretofore been sedentary and quiet. How about golf, you ask? Fine! It can be taken up easily and leisurely at first, and energy added as increased training or inclination allows. Walter Camp claims that the royal and ancient game is particularly adapted for the not too active and otherwise easy going man over 40. I have yet to hear of a sudden death on any golf course.

We must now introduce into our discussion, hypertension and its connection with kidney trouble. Up to now we have been reviewing certain conditions of high blood pressure in which kidney lesions have little clinical importance. In chronic nephritis blood pressure is almost always increased, and the most modern view of hypertension associated with this condition is that the disease is one of the whole cardio-vascular-renal system, rather than a renal disorder alone.

Hypertension, hypertrophy of the heart, and sclerosis of the arteries of the kidneys, is a most frequent coincidence that as yet baffles satisfactory explanation. Does the sclerosis cause the rise in pressure? It hardly seems possible in view of our often finding hypertension with no kidney lesion. Still it cannot be proved that the hypertension is primary. The diseased kidneys may give off some poison which is absorbed into the general circulation and there, acting on the musculature of the arterioles, cause tonic contraction, with resultant increase of work on the part of the heart thus forced to drive the blood through narrowed channels. All this notwithstanding, gentlemen, the whole question resolves itself back to my basal assertion that hypertension in its widest meaning is but a manifestation of change coincident with disturbance of the general cardiovascular system, and that for reasons as yet unknown. The high blood pressure accompanying chronic nephritis cannot be explained otherwise.

It has been my recent privilege and pleasure to delve into the history of what was first called some 40 or more years ago "high arterial tension," and I was met with a veritable parade of assertions, denials, and constant shifting of opinion. Traube, Johnson, Mahomed, Huchard, the renowned Osler himself, down to Krehl and Riesman, in turn argued their beliefs and non-beliefs as to this condition being essentially one belonging to disease of the kidneys alone. An interesting review withal, but not over-prolific of definite decision.

Two distinct pictures feature chronic nephritis, depending on the presence or absence of edema. High blood pressure is invariably an accompaniment of both conditions. In chronic nephritis with edema, moderate increases in pressure are often to be noted, while the arteries as a rule do not show physical signs of change. Demonstrable arteriosclerosis is the exception rather than the rule, and hypertrophy of the heart does not usually develop until the late stages when high blood pressure is then pronounced.

Without edema cardiovascular changes are almost the rule, and high blood pressure a constant feature—as high as 250 or more is often encountered with well marked arteriosclerosis.

During pregnancy constant determinations of blood pressures should be made, particularly towards the end. A temporary rise due to constipation while in this condition is quite common, and if unaccompanied by other symptoms, is harmless. But where there is high blood pressure, and that on a continuously ascending scale, hemorrhagic lesions in the placenta are often forecast. With or without albuminura, toxemia is indicated.

In all infectious diseases the blood pressure inclines to be subnormal. This is true in typhoid fever, the systolic pressure falling in greater degree than the diastolic. In peritonitis the pressure is exceedingly low, and a similar condition observes in large hemorrhage.

Now as to arteriosclerosis, which is a chronic disease of the arteries and arterioles characterized by increase or decrease of the thickness of the walls of the blood vessels. What causes it? Here again there may be a variety of causes. You have in many cases to go to the family cupboard and uncover the family skeleton. The genealogical tree often provides the clue. That syphilis begets syphilitics no man can deny. The birth control faddists have a

pet saying about the "right of the child not to be born," and truly when one sees so much inherited tissue that is poor and even diseased, Mrs. Sanger *et al* are possibly more than empiric. Constitutional disease, degeneration produced by drugs and alcohol, breed true to form, even unto the biblical third and fourth generation. For the tissue we start out in life with we have to thank or damn our progenitors.

Of course, arteriosclerosis can be acquired, still don't lose sight of the fact that poor tissue is less able to ward off attack than good healthy tissue. Its the quality of the tissue, not the severity of the attack that is the deciding factor.

Examinations for life insurance provides a fertile route through which many hitherto unsuspected conditions of arteriosclerosis and high blood pressure have been brought to light. Probably these medical examiners have had better opportunity to observe early cases than have practitioners anywhere. No applicant who has sclerotic arteries and hypertension is a good insurance risk, but although he may be refused, as is most likely to be the case, yet certain good should be the result of his being made acquainted with his condition if he will but submit himself to his own physician for advice and treatment. This leads me on to the now strongly advocated periodic health examinations, and the foregoing is but another argument in the long chain of many towards the consummation of that grand idea.

Now my field is covered, and my limited time almost up. In prescribing treatment, be individual; study your patient, his physical condition and his natural disposition. Treat the man more than the disease. Let hygienic and dietetic measures have full sway; reserve drugs and stimulants for the emergencies. Sell yourself to the patient; inculcate in him a belief in *you* rather than in your remedies. This done, you will have acquired a friend, a follower, a booster if you will, for the duration of his life.

In handling cases of hypertension and its more common accompaniments, you are called upon to treat more than you wot of. You are called upon to relieve pain, physical and mental; you can prolong life. You are presented with opportunities, and ready-to-hand ones, for intimate study and research into something that is all too veiled and obscure in all its phases.

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CONGENITAL ATRESIA OF THE DUODENUM WITH REPORT OF A CASE*

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Congenital atresia of the gastro-intestinal tract in the new born is sufficiently infrequent to warrant a detailed report in every diagnosed case, not only from the standpoint of scientific interest in a rare clinical entity, but also that points of value may be gleaned, from a careful case history, which will aid in a sufficiently early diagnosis to enable us to provide surgical intervention before the case is beyond redemption.

Cases of atresia of the duodenum are divided anatomically into two classes:

1. Those in which the first portion of the duodenum terminates in a blind pouch and has no connection with the remainder of the intestine.

2. Those in which the proximal and distal portions of the duodenum are connected by a fibrous band.

The latter type are in comparison more numerous than the former, but an idea of the great infrequency of cases of this type can be obtained from Losee's (1) compilation from the records of the New York Lying In Hospital who reports one case in a series of 22,800 new born.

Another point of interest in cases of this type is the location of the ampulla of Vater and the relation of the hepatic trinity. After a careful search of the literature Little and Helmholz (2) were only able to find 27 reported cases of Atresia of the Duodenum above the ampulla. The case to be described in this paper, as will be shown later, can be added to this list. Atresia below the ampulla is relatively more common. McDonald (3) reports a case of atresia of the duodenum in which the bile and pancreatic ducts had no connection whatever with the intestines.

The detailed account of the case to be reported including the autopsy record is as follows:

Baby S., born of Polish parents on September 24, 1924 at 8:30 p. m. Father 27, mother 24, both in good health. No miscarriages. One other child living and in good health.

The mother had good prenatal attention. The delivery, however, was unattended but normal in character. The obstetrician arrived about ten minutes after the child was born, at which time, the cord was severed and the placenta, which was normal in every respect was delivered.

The baby had a birth weight of seven and one-half pounds and had no visible congenital abnormalities. Its breathing and cry were normal.

About two hours after birth, the baby retched considerably and vomited about two ounces of

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brownish black material which, according to the practical nurse in attendance, had little or no odor and resembled coffee grounds. This was before the baby had taken anything into its stomach.

About ten hours after birth the baby was put to breast, but refused to nurse. The breast was pumped and an attempt made to feed the colostrum with the bottle, but this also met with failure and a small amount was finally administered with a medicine dropper.

This type of feeding was continued at four hour intervals with occasional feedings of boiled water. At irregular intervals and with no relation to the feedings, the baby would retch and vomit varying amounts of the black material always similar in character to the first.

A small amount of meconium was passed early in the morning of the 25th and again in the afternoon. History was also obtained of occasional urination of small amounts during the night of the 24th, but none after that.

The condition continued unchanged throughout the day of the 25th, except that in the afternoon the nurse noticed some convulsive twitching of the hands, arms and legs, and a slight retraction of the head. Also a slight degree of dyspnea.

The case was seen for the first time late in the evening of the 25th at which time the history just given was obtained. The baby at our first examination was quiet and seemed to be in no pain. The anterior fontanelle was depressed; the pupils were equal and contracted; there was slight retraction of the head and some rigidity of the neck muscles; the heart sounds were rather weak and extremely rapid; the lungs were negative; the abdomen was not distended and no palpable tumor or visible peristalsis was present; rectal examination revealed nothing; the skin was dry; Kernig's sign was positive on both sides; the rectal temperature was 101 deg. F. The baby had an attack of twitching of the extremities during examination and also vomited some of the black material, a portion of which was saved and at a subsequent examination gave a positive test for occult blood.

A tentative diagnosis of hemorrhagic disease of the new born was made with gastro-intestinal and probably intra-cranial hemmorhage. At this time twenty cc. of whole blood obtained from the father was given intra-muscularly and one dram of castor oil was ordered to be given.

The morning of the 26th the symptomatology and general condition was unchanged, but the baby was perceptably weaker and markedly dehydrated. The stomach was washed and an enormous amount of the black contents recovered, together with an oily substance which proved to be the castor oil given the night before. After lavage three ounces of a 4 per cent soda bicarbonate solution was allowed to remain in the stomach, which was promptly vomited, and one hundred cc. of physiological saline was given intraperitoneally. Following this the baby, which had been previously restless and sleeping only for a few minutes at a time, slept for four hours without waking.

A bleeding time done in the evening of the 26th was 25 minutes and another intramuscular injection of 25 cc. of the father's blood was given. On the 27th the baby's condition seemed slightly improved, but it was still vomiting portions of the food ingested, but the vomitus had no discoloration. The symptoms of cerebral irritation had disappeared. Because of the continued vomiting intestinal obstruction or malformation was considered, but the dehydrated and acidotic condition of the patient made surgery seem inadvisable. The stools had changed from meconium to merely a bile stain on the diaper. Intraperitoneal infusion of saline was twice repeated during the day and also five per cent glucose was given per rectum.

On the 28th the baby was so weak and in such a ragged condition in spite of the large fluid administration, that a blood transfusion was decided upon and at 1 p. m. 50 cc. of citrated mother's blood was given into the sinus through the anterior fontanelle. The general condition improved following this and at 8 p. m. it was repeated.

The baby slept quietly during the greater share of the evening, but at 4 o'clock on the morning of the 29th the nurse was attracted by a choking noise from the baby and found that blood was running from the nose and mouth. In the matter of a few minutes the baby was dead.

AUTOPSY

Permission for autopsy was granted and was performed with the following findings:

Examination revealed an emaciated infant with considerable hypostatic congestion, but no external evidence of anomaly. There was slight abdominal distention limited entirely to the upper abdomen.

Section of the skull revealed two small areas of subpial hemorrhage, one in the right parietal region and the other in the left temporal region.

With the exception of the abdominal condition, the remainder of the autopsy revealed nothing abnormal.

On opening the peritoneal cavity a small amount of serous fluid was found. An enormously dilated stomach filled the entire left upper abdomen and part of the right. The esophagus was slightly dilated near the cardia, but above that was normal. The small and large intestines were collapsed to the point of being ribbon like and on opening, a bile stained mucosa was the only thing found. The pyloric ring was dilated to the width of 3 cm. The duodenum was also markedly dilated, being 6 cm. at its widest portion. It passed up and back for five and one-half cm. beyond the pyloric ring and ended in a blind pouch. The distal portion of the duodenum was located with some difficulty and was found to be collapsed and also to end in a blind pouch. There was no connection between the two portions either by fibrous band or otherwise.

The liver was normal in size and the gall bladder was but partially filled. The hepatic trinity was in correct relation and the common bile duct and pancreatic duct entered the distal portion of the duodenum about one-half cm. from its termination. The pancreas was normal in size and position.

A normal circulatory system was found to be present and no other anomalies were discovered.

On opening the stomach it was found to be partially filled with coagulated blood. Practically all of the stomach wall was markedly thinned. A large area of the mucus membrane of the anterior wall was densely infiltrated with blood. The pyloric ring was dilated to a scarcely perceptable band of fibres. The wall of the proximal portion of the duodenum was also markedly thinned.

THEORIES OF ETIOLOGY

The cause of congenital atresia of this type has been the basis of much discussion and many hypotheses have from time to time been set forth. Fetal peritonitis, fetal volvulus and adhesion of a Meckel's diverticulum have all been offered as possible etiology. They may explain isolated cases, but certainly do not hold good for all. For example, fetal peritonitis would in all probabil-

ity be either tuberculous or luetic in origin. It is hard to conceive of a luetic infection being present and causing an anomaly such as described in an otherwise apparently healthy, full term child. It is likewise improbable that a tuberculous infection would limit itself to one isolated location and give no evidence of trouble elsewhere. A fetal volvulus or adhesions of a deverticulum could cause an occlusion or atresia of the jejunum, illeum or colon, but probably would not effect the duodenum. We have to look to some other more logical reason.

It is a known fact that two of the most frequent locations for an atresia to appear are first, the duodenum in the region of the ampulla of Vater and second, the ileo-cecal region.

Reviewing the stages of development of these particular locations we will remember that they are the sites of very important embryological events. From the duodenum we get the outgrowth which is the anlage of the bile ducts, the liver and the pancreas and is also the site of a very complicated rotation. In the region of the ileo-cecal junction we get an outgrowth which becomes the cecal sacculation and the appendix. It is entirely possible that a congenital atresia could result as a deviation from the normal during these complicated embryological processes. In addition to these points of predilection for congenital atresia there are two more which are not the sites of important or complicated developmental events. These are the splenic flexure and the rectum and anus.

We will consider for a moment the evidence of somatic or segmental development of the human embryo. We have the vertebral and costal development with the spinal nerves and intercostal arteries which can be considered the nerve and artery to a segment; the urogenital ridge and the frequent persistence of an isolated artery direct to the superior pole of the kidney, and other manifestations which could be mentioned. In the abdomen, however, evidence of this is largely lost, due to the growth of the intestinal canal out of all proportion to the remainder of the body, and the resulting coils and rotation. There is, however, one bit of evidence that remains, the blood supply. The three main divisions of abdominal circulation are the coeliac axis, the superior and the inferior mesenteric arteries. In the duodenum in the region of the ampulla of Vater, the superior pancreatico-duodenal, which is a branch of the right gastro-epiploic, anastomoses with the inferior pancreatico duodenal which is a branch of the superior mesenteric. At the splenic flexure the superior and inferior mesenterics anastomose, and at or near the mucocutaneous junction of the anus and rectum the middle hemorrhoidal, a branch of the inferior mesenteric and the inferior hemorrhoidal, a branch of the internal iliac, anatomose. In this way the abdominal circulatory systems are united and these points of anatomosis we can interpret as evidence of somatic development in the abdomen and here as we have pointed out are the most common locations of congenital anomalies.

It is not difficult to see that if in the process of embryonic growth, the blood supply of two of these segments fail to unite, or if the vascular development is in any other way interfered with there may be a portion of each which will not receive nourishment and as a result will undergo atrophy, which may or may not be complete.

There is another view which can be taken as a possibility in the etiology of these anomalies. It has long been an accepted fact that congenital malformations in other parts of the body, as for example the cleft palate, spina bifida, absence of half of a vertebra, horse shoe kidney and bicornate uterus, have resulted from a disturbance in the segmental development of the embryo. Why then, assuming that the vascular arrangement of the abdominal organs is a manifestation of segmentation, can we not say that an atresia at the locations already described is in reality a reversion to the somatic structure of the lower type of animal life? In other words, metameres which failed to undergo fusion?

In our estimation these two are the most logical explanations of the etiology of conditions of this type barring those of course which have some concrete cause demonstrable at operation or autopsy.

POINTS OF VALUE IN THE DIAGNOSIS

As has been said before the formation of hypotheses for the etiology of anomalies of this sort provides extremely interesting subject matter for discussion, but the true value in a detailed case history is in the clinical points which can lead to an early diagnonis, so that surgical treatment, consisting of enterostomy to supply nourishment that can be absorbed or gastro-enterostomy, to provide an exit from the stomach, can be administered before the baby is so weakened that it would be of no avail.

Slight vomiting or regurgitation during the first days of life is very common, but vomiting before anything is taken into the stomach, persistent in character, and in no relation to the food intake is extremely important. The possibility of a hemorrhagic condition in this particular case would of

course exaggerate this symptom somewhat, but in all the reports of duodenal atresia that we were able to find in the literature, this symptom was emphasized.

By way of differentiation it may be well to say that the vomiting in hypertrophic pyloric stenosis seldom manifests itself in the first week or ten days and when it does appear it always has a definite relation to fluid intake. Also the emaciation is more slow in appearing due to the fact that a certain amount of the food reaches the intestine. In these cases too, we are usually able at some time to demonstrate a palpable tumor. Also bacteria can be found in the stool.

The presence of bile in the vomitus of a case of persistent vomiting would not arouse undue suspicion as a certain amount of bile containing duodenal contents could easily be regurgitated into the stomach, but a complete absence of bile in the stool or vice versa, presence of bile in the stool and absence in the vomitus as in our case, should immediately lead you to think of an obstruction or atresia of the duodenum above or below the ampulla as the case may be.

Anuria after the first twelve hours is also an important symptom and is always present due to the inability of the stomach to absorb fluids.

An absence of bacteria and end products of food digestion in the stool is also a significant finding.

The presence of drugs in the vomitus administered the previous day is important as in the case of the castor oil given to this baby.

The extremely rapid and progressive emaciation so far exceeding the usual initial weight loss is still another symptom of importance.

CONCLUSIONS

An effort should always be made to report cases of this type to the literature.

Whenever this condition is suspected or can be diagnosed, a very grave prognosis should be given, for nowhere in the literaturue were we able to find a case which had survived surgical treatment.

An early diagnosis is imperative, for surgical treatment must be instituted before such a state of emaciation and acidosis is reached that an operation could not possibly be tolerated.

The symptoms outlined above should always be thought of when dealing with a case of persistent vomiting in the new born and the possibility of congenital intestinal atresia or obstruction considered.

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THE SURGICAL SIGNIFICANCE OF ACUTE GLANDULAR FEVER*

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The object of this paper is to call your attention to a condition which often goes unrecognized and which may present rather confusing diagnostic problems.

The term, glandular fever expresses more a symptom complex rather than a pathological entity, but it has retained this name since first described by Pfeiffer[1] in 1899 as "Drusenfieber". Osler[2] defines it as an infectious disease of children, developing as a rule without premonitory symptoms, and characterized by slight redness of the throat, high fever, swelling and tenderness of the lymph glands of the neck, particularly those behind the sterno-mastoid muscle.

Similarly other text books pass over this condition rather lightly, mentioning only the fact that there is fever, and swelling of the glands, the fever subsiding in two to four days and the swelling of the glands in ten days to two weeks.

The literature on this subject is unusually meager. We were able to find only three references to the subject in the last four years. West[3], of Bellaire, Ohio, at one time reported ninety-six cases occurring in children between the ages of seven months and thirteen years. All authors who have written on the subject agree as to the general symptomatology. That is, fever, pain in the neck, redness of the throat and pharynx, swelling of the cervical and at times the inguinal lymphatics, but treat only lightly the abdominal symptoms. It is to these symptoms that I wish to call your attention and the possibility of confusing this condition with other acute abdominal symptoms especially acute appendicitis.

Osler simply states that there may be nausea and vomiting. Jameson says that where the retroperitoneal glands are involved alone, the diagnosis is beset with difficulties. Levine[4] in reporting five cases, noted no vomiting but anorexia and constipation were the rule. Zimmerman[5] reports frequently nausea and occasionally vomiting and abdominal pain. Pfeiffer says that pain around the umbilicus indicates involvement of the mesenteric lymphatics.

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During the last year or eighteen months, all of you, no doubt, have seen cases of this type, which fall under the typical text-book description of the disease, but I have no doubt that many of the cases of "just fever" in children which recover spontaneously without any satisfactory explanation as to their cause, fall into this category and case number three reported here illustrates quite conclusively that this disease is not confined strictly to childhood.

Allow me to quote from Zimmerman's description of a typical case of acute glandular fever, after which are reported three cases in which the clinical picture was vastly different, leading to a tentative diagnosis of appendicitis. Zimmerman says, "the clinical picture reveals a child taken suddenly ill, with fever rising rapidly to 104 degrees, malaise, frequently nausea and occasionally vomiting, complains of pain in the limbs, and usually pain in the throat and occasionally in the abdomen. Upon examination, swelling and acute tenderness of the glands of the neck are found, below the angle of the jaw usually on the left side. The lateral deep cervical glands can be felt slightly enlarged like a string of beads. The entire lateral and posterior aspects of the neck are dotted with glands. The temperature is very irregular and often rising and falling several times during the day, ranging from 101 to 104 degrees. Recovery is slow, but the prognosis is favorable in most cases. Fatal cases are reported and death is usually due to nephritis. Some cases go on to suppuration of the glands. The total white count ranges from 12,000 to 15,000."

CASE REPORTS

Case 1. A child four years old, white. Past history is unimportant. Had been sick two days when first seen. Began with vomiting shortly after breakfast. Vomited several times during the day and the following night. A purgative was given twice, but could not be retained. The next day the mother says there seemed to be a slight fever, and the patient refused all nourishment, was kept in bed and it was noted that the child preferred to lie with the thighs flexed on the abdomen. There was no bowel movement.

Examination. Child lay with the thighs flexed. There was no rigidity of the neck, no cervical swelling and no tenderness. Ears were negative. The throad was not reddened, tonsils negative and nose negative. Examination of the chest revealed nothing, respirations 26. The abdomen was moderately distended and tympanitic throughout. There was definite rigidity of the recti muscles, especially on the right. The whole abdomen was sensitive to touch, but the tenderness was very marked over the right lower quadrant. There were no areas of dullness and no tumor masses. The child cried when the legs were extended. Rectal examination was negative. Temperature 99.5, pulse 118. A provisional diagnosis of acute appendicitis was made. An enema and ice to the abdomen was ordered. The patient was seen again that evening. The enema had been very effective and the distention of the abdomen had markedly decreased. The tenderness was not so acute and less localized to the right side, and the mother volunteered the information that the child cried when turned in bed and that the neck seemed to be stiff. On examination of the neck it was found that there was a definite beady adenitis along the anterior border of the left sterno-mastoid muscle, and marked tenderness over this region. Temperature was 101. A diagnosis of the glandular fever was now made. Twenty four hours later the swelling on the left showed a marked increase and a beginning involvement of the right. A prolonged but uneventful convalescence followed.

Case 2. Case of Dr. L. O. Geib. Boy, white, aged 8. Had been sick 24 hours. Past history unimportant. Present illness began with vomiting and pain in the right side. Temperature 102. Throat and ears negative. No rigidity of the neck, no tenderness nor swelling of the glands. Chest was normal. The abdomen was extremely rigid. The legs were drawn up in flexion and extension caused pain. Acute tenderness to the right and below the umbilicus. Dr. Geib made a diagnosis of appendicitis. I was called to see the boy the following morning. The abdomen was still very rigid and there was acute tenderness over the right lower quadrant but at this time there was also a definite shotty cervical adenitis on both sides, being more pronounced on the left. The diagnosis was now changed to acute glandular fever. That night the patient had another attack of vomiting and the temperature rose to 103 degrees. The abdominal pain subsided in three days and the fever and glandular swellings gradually disappeared.

Case 3. Female, age 27, white. Past history unimportant except that she had been treated for a mild cystitis about two months ago. This condition had entirely cleared up. Had now been ill about twelve hours. Began with sudden severe cramping pains in the abdomen. Pain now was in the right lower quadrant. Had been vomiting at intervals all day. Unable to retain water. Never had a similar condition before. Bowels moved several times since onset. Last menstrual period about a week ago.

Examination. Head, neck, throat and chest were negative. The abdominal muscles were held very rigid. There was no abdominal respiratory movement. The whole abdomen was sensitive to pressure, but this was especially marked on the right side. Pressure over this region produced a feeling of nausea. There was no area of dullness and no tumor masses. Vaginal and rectal revealed nothing except tenderness high up on the right side. Temperature 101, pulse 120. A diagnosis of acute appendicitis was made, and the patient sent into the hospital. Blood count. Total count, 16,000, polymorphnuclears 85 per cent, lymphocytes 12 per cent.

A possibility of acute glandular fever was considered and dismissed. Immediate operation was advised and accepted.

Operation. Right rectus incision. The caecum with what appeared to be a perfectly healthy appendix was easily delivered. The usual appendectomy was performed. It was noted, however, that there were a number of unusually large lymphatic glands in the meso-appendix and considerable congestion of the mesenteric vessels. On further examination it was found that the entire mesentery was filled with swollen lymphatics ranging in size from a split pea to a lima bean. There were no

palpabe or visible Peyer's patches. The correct diagnosis was now apparent.

Twenty-four hours after operation the patient complained of stiffness of the neck and pain on swallowing. Examination showed the usual tenderness and swelling of the glands under the left sterno-mastoid muscle.

SUMMARY

Here then are three cases of undoubted glandular fever which at first presented a very markedly different picture than the ordinary case. In my opinion the reasons for this are as follows; as previously stated the disease may affect any and all of the body lymphatics, the majority of cases, however, involving only the cervicals.

In the cases reported the brunt of the infection hits the mesenteric glands with the resulting confusing train of symptoms. Just why these symptoms should be more pronounced in the right lower quadrant one would hesitate to say, any more than it is possible to satisfactorily explain why some cases of pneumonia in the early stages very strikingly resemble acute appendicitis. It is possible that the infecting agent gains access to the mesenteric glands by way of the intestinal tract and involving the mesenteric nodes travels up the throacic duct, infecting in turn the cervical glands of the left side. I believe that is the reason why the glands of the left side are usually the first to be involved after the onset of the abdominal symptoms.

As to the differential points in diagnosis, I think they are practically negligible, unless the swelling and tenderness of the cervical glands is already present when the patient is first seen. Another point that may be of minor value is, that the abdominal symptoms and fever seem to be more severe and out of proportion than in the usual case of appendicitis, and the pain is more generalized even though the point of greatest intensity is in the region of the appendix.

In conclusion I would suggest, that before making a diagnosis of acute appendicitis, especially in children, it be remembered that in acute glandular fever is often encountered another of the many pitfalls in the maze of the right lower quadrant.

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PAROXYSMAL AURICULAR FIBRILLATION AND CARDIAC SYNCOPE*

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Syncope due to cardiovascular abnormalities may extend from a momentary loss of mental acuity to complete unconsciousness which later is often accompanied by convulsions, resembling at times more or less superfically, true idiopathic epilepsy. The minor expressions of this common disorder occur as the transient syncopal attacks so frequently observed in people suffering from debilitating diseases and in highly nervous women. Here the attacks are often induced by the sight of blood or by other minor circumstances. The more serious forms are associated with or identified as the Adams-Stokes syndrome, after profuse hemorrhages, or as embolic phenomena and they also frequently accompany the spasm of a cerebral artery.

The tendency to "fainting" or the reaction to a diminished cerebral blood supply varies widely in different individuals, loss of consciousness being readily induced as previously stated in the slender, visceroptotic nervous woman, while it rarely occurs in the slow, phlegmatic type of individual.

In the classical description by Adams of that syndrome now recognized by the name Adams-Stokes, he noted spells of unconsciousness occurring in a man whose heart at autopsy was found to be hypertrophied and very "fatty." This syndrome occurs almost invariably in elderly individuals whose hearts show advanced degenerative change and where an advanced arteriosclerosis is frequently present. This association is so frequent that Huchard advanced the dictum that the Adams-Stokes syndrome is due to arteriosclerosis. This syndrome is frequently associated with, but by no means synonymous with heart block. It is considered as usually being due to ventricular standstill. This condition is rarely associated with acute inflammatory conditions of the heart and its recognition is at once apparent by the sudden stopping or decrease in the ventricular rate occurring synchronously with the loss of consciousness.

Embolism and its resultant phenomena are due to vascular causes and the loss of consciousness is not due to cardiac changes. These accidents are invariably accompanied by signs or sequelae such that their identity is rarely in doubt.

A further cause of syncope and one which occurs usually in elderly sclerotic people is that due to spasm or claudication of a cerebral artery. These attacks are at times accompanied by convulsions. Paralysis of various forms

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are also frequently present and by their transient or temporary nature aid materially in the differential diagnosis.

During the past year we have observed three patients in whom the chief complaint was syncope with dyspnea and palpitation. All three of these individuals were found to have the same typical and distinctive valvular lesion and at the time of syncope they all underwent the same irregularity of cardiac rythm, which, to our mind, appears to stand in a causative relationship to the loss of consciousness.

REPORT OF CASES

Case No. 1. Mechanic, age 56. He was first seen in August, 1924, complaining of spells of unconsciousness with convulsive movements, dyspnea and palpitation. He had had rheumatic fever at the age of sixteen when he was sick for seven weeks. The remainder of his past history was otherwise negative. The present illness had started four years previously with "spells" characterized by unconsciousness, clonic contractions of skeletal muscles, rolling of his eyes, cyanosis and occasional biting of his tongue. This condition would last about one minute and the complete return of mental function was regained in ten minutes. Following the attacks he would be sleepy and tired. The seizures had increased in frequency and but recently had he noted dyspnea on slight exertion, palpitation and a sense of constriction in the chest.

Physical examination showed him to be a short, undernourished individual. The pupils reacted normally to light. There was considerable oral infection. Moderate dyspnea and cyanosis were observed. There was a palpable pulsation of the aortic arch in the suprasternal notch. The apex impulse was felt in the fifth interspace, ten centimeters from the mid-sternal line. The apex rate of the heart was 120, the radial rate 80 with a pulse deficit of 40, the cardiac rhythm being absolutely irregular. There was a rough blowing systolic and a definite presystolic rumble heard at the apex, the latter showing a palpable component. A soft blowing diastolic murmur was heard along the left sternal border. The radial arteries were just palpable, the lungs were clear and the liver edge was felt 8 centimeters below the costal margin. There was no edema of the extremities.

The routine urine examinations were all negative, blood N. P. N. and urea were 45.6 and 22.9 respectively. The blood Wassermann was negative. An electrocardiogram showed auricular fibrillation, the T waves being inverted which inversion was later shown to be due to previous digitalis therapy. Our final diagnosis was: rheumatic heart disease, mitral disease, paroxysmal auricular fibrillation, cardiac syncope initiated by onset of auricular fibrillation.

Case No. 2. Mechanic, aged 39. This patient was brought to the hospital following a sudden attack of unconsciousness which occurred while he was at work. According to his story after regaining consciousness, he had noticed a peculiar sensation in his head which traveled to his stomach and was followed by unconsciousness, he knowing nothing until he awoke later in the first aid station. He had suffered a similar attack eighteen months previously. He had no other symptoms and was not aware of ever having had any rheumatic infection.

Physical examination showed a well nourished man. The pupils reacted promptly to light. The tonsils were enlarged and cryptic. There was cyanosis of his lips. The apex heart rate was 132, radial rate 102 or a deficit of 30. The cardiac rhythm was absolutely irregular. The left cardiac border was 11 centimeters from the mid sternal line, the right border 4 centimeters in the fifth intercostal space. After the heart's rhythm had become regular, a distinct short systolic murmur and a presystolic rumbling murmur ending in a snapping first sound were heard at the apex. There were no thrills nor shocks. The lungs were clear and the spleen and liver were not felt. There was no edema.

The blood Wassermann was negative. An electrocardiogram taken on the day of admission showed a rapid auricular fibrillation with coarse auricular waves, and on the following day, the heart had returned to normal sinus rhythm with marked relief in the patient's symptoms. Our diagnosis was: rheumatic heart disease, mitral disease, paroxysmal auricular fibrillation, cardiac syncope due to onset of auricular fibrillation.

Case No. 3. Mechanic, age 31. He complained of spells of unconsciousness, dyspnea and palpitation. He had rheumatic fever at seventeen and had had frequent attacks of tonsillitis since that time. He had noticed dyspnea and palpitation on moderate exertion for the past four years which symptoms had become worse during the previous four months. The first spell of unconsciousness occurred four years previously and was preceded by a feeling of "too much air in his throat" followed by sudden unconsciousness. In falling he would hurt himself, but there had been no biting of the tongue or marked convulsive seizures. Following these attacks there would be unusual tiredness and he would be very sleepy.

Physical examination showed him to be a muscular and well nourished man. The pupils reacted normally to light. His tonsils had been removed. The chest expanded well and the lungs showed no abnormal changes. There was slight cyanosis of the lips but no dyspnea. There was no unusual pulsation in the neck vessels. The apex impulse was not felt, the left cardiac border was 10½ centimeters from the mid sternal line in the fifth interspace. The muscle tone was fairly good and the heart rhythm showed absolute irregularity. There was a blowing slightly musical systolic murmur at the apex and a faint presystolic rumble ending in a booming first sound was audible in the same area. There were no thrills or shocks. The spleen or liver were not felt and there was no edema of the extremities. The urinary examinations were all normal and the blood Wassermann was negative. The initial clinical examination of the heart revealed the presence of auricular fibrillation with a definite pulse deficit but when the electrocardiogram was taken twenty-four hours later, there was normal sinus rhythm, no extrasystoles, but a P-R interval of .2 of a second or the upper limit of normal.

COMMENT

It is of interest that none of these patients between attacks suffered from any acute heart symptoms or showed sufficient heart failure to prevent their gainful occupation or to cause them much discomfort. The electrocardiogram of each patient taken while normal sinus rhythm was present, failed to show any unusual changes.

It has been recognized that occasionally when paroxysmal auricular fibrillation with slow fibrillary rhythm interrupts a normally rhyth-

mic heart that the transition is frequently accompanied by symptoms similar to those of the Adams-Stokes syndrome.

A further cause of syncope in heart disease is the onset of very rapid ventricular action with the resulting fall of arterial and rise of venous pressure. The results from this change in heart rhythm are, however, proportionate to the health of the ventricular muscle.

All three patients were suffering from auricular fibrillation when seen shortly after their spell of unconsciousness and all resumed sinus rhythm during the following twenty-four hours. The onset of auricular fibrillation is frequently associated with sudden dyspnea, palpitation, feeling of choking or throbbing in the throat and a sense of oppression in the chest, but presumably only occasionally by sudden unconsciousness.

We wish to emphasize the importance of recognizing paroxysmal auricular fibrillation as a cause of sudden syncope, at times associated with convulsions or even somewhat resembling epilepsy.

It is unfortunate that we were not able to observe our patients at the time of the heart's transition from normal to abnormal rhythm, and that our opinion must be based to a certain extent on presumption. However, the presence of identical heart disease with an essentially negative previous symptomatic history and with the rapid cessation of the disturbed rhythm following the attack, makes the association very evident.

In the first case, whose age was 56 years, the question might arise as to whether he were not subject to true epilepsy, idiopathic or on an arteriosclerotic basis. His identical history, type of heart disease and paroxysmal irregularity all point, however, to placing him more in the group of cardiac syncope.

The most important element in these cases is naturally the proper recognition of the cause. Once recognized, rational therapy can be instituted and measures taken for the protection of the individual.

SUMMARY

The various cardiovascular causes of syncope have been briefly stated and discussed.

Three cases have been presented in whom syncope appeared to be due to the onset of paroxysmal auricular fibrillation.

The importance of recognizing the sudden onset of auricular fibrillation as a cause of sudden unconsciousness has been emphasized.

THE TREATMENT OF ACUTE EPIDIDYMITIS

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It is the purpose of this paper, to point out certain principles in the treatment of Neisserian infection of the lower genital tract in the male, with special reference to the early or acute phases of conditions commonly known as orchitis, vasitis and epididymitis.

It would be difficult, indeed, to consider the treatment of these complications, without first having briefly touched upon the most important factor, namely, preventive measures. The gonococcus is delivered to the anterior urethra through the external meatus by direct contact. It is further transferred to the posterior urethra either by forces from without—forcing bacteria laden pus back of the cut-off muscle with solutions or instruments or other traumatism—or by direct extension of a column of exudate along the membrane through obstructive factors such as small meatus, stricture, oedematous urethral wall, periurethritis, or others involving a blocking of the secretions. There is an impression, which appears to have a host of adherants, not only among the laiety, but among the profession, that all posterior inflammatory reactions are forced back from the anterior urethra by mechanical means in the hands of the attending physician of the patient. Nothing could be more erroneous. One is more often impressed with striking fact that more of such complications are not the rule. Indeed, it has been to me, more difficult to understand why these patients get well than to see multiple reasons for their failure of recovery. Centainly, it is not any more justifiable for the physician to assume full credit for prevention of such complications, than it is to censure himself for their occurrence, provided he has fulfilled only such duties as are in his power.

As soon as the gonococcus is delivered to the ejaculatory duct, an inflammatory reaction travels to the vesicle and vas by much the same manner as in the urethra, namely, bacterial growth behind an inflammed mucous membrane obstruction. So long as drainage is sufficient through the duct, the infection may go no further than the vesicle and although there may be a marked posterior urethritis with the usual prostatitis, Cowperitis or vesiculitis, one may frequently meet no lower tract infection, whatsoever. It is quite obvious then, that with an infection behind the triangular ligament it is the rule that infection of more than one of the paraurethral tracts is present. This being the case, it is evident that prognosis should be carefully and honestly given to obtain real cooperation of the patient. I believe that evidence of posterior infection can be demonstrated in the majority of specific urethritis cases. Why not admit the seriousnes of the infection at its onset rather than to belittle the real condition? These patients are entitled to the fact and in my experience, appreciate being told the truth

The gonococcus almost invariably takes the mucus membrane extension route to the

lower genital tract, rather than the hematic or lymphatic. Therefore extension along the lumen of the vas is the rule, though symptoms of this complication may be vague or may vary greatly. It is not until the infection has extended to the tail of the epididymus, frequently, that the patient is aware of his impending condition. Clinically, at least, epididymitis cases fall under two heads. First, are those which come on abruptly, any time during the infection, with great swelling of the scrotal walls, redness, pain, sickening in character, extending from the involved area, with fever, chills, leucocytosis, and the usual malais of pyogenic infection. Second, those with moderate vasitis, moderate swelling in the region of the tail of the epididymus, and no definite involvement of the remaining portions of the organ. There is no hydrocele and for that reason the signs of pressure on the testes are not manifest in the autonomic nervous system. There is not enough passive congestion of the tunica viginalis to cause acute pressure signs; the principles involved being much like other serous effusions in serous sacs elsewhere.

Pathological changes in these cases are directly proportional to the parts involved and the destruction wrought may be of the type such as can undergo repair, but in the majority, it is so destructive as to render the tract impervious to spermatoza even after the best of treatment. The fibrosis in the lumen of the tubules as well as in the supporting structure in the majority of cases becomes marked enough to completely obstruct their functional activity. Rarely does abscess of the gonorrheal epididymus burrow through the coverings to the exterior, much unlike that of tuberculosis of that organ. The majority of these cases recover symptomatically. Some, of course, go on to chronicity. They are self limited so frequently, that one finds it difficult to accredit the so-called cure of the condition to the selected method of treatment. I am frank to admit that from my observations to date, I am not enthusiastic about any form of treatment, be it surgical, medical diathermy, local or general. One sees so frequently reports of series of cases, large and small, treated by this or that method; the one used in each case by the author being held out as a Panacea.

Any means to prevent the occurrence of an acute epididymitis or to hasten its resolution or symptomatic recovery should be considered. The general treatment of the case both from a systemic and local standpoint should be attended to. Rest in bed is imperative. Support of the scrotum is important. Local applications such as heat and cold, poultices, analgesic compounds are frequently valuable. I believe that some of these measures or a combination of them should be always employed. Should the infection show an increasing severity, unless there is some contraindication, I have found that surgical intervention has given some brilliant results in this latter type of cases. In my experience, the early hospitalization of the severe or moderately severe type with early surgical intervention, has given the best results. Up to the present at least, I believe I have made the mistake more frequently of failing to operate early than I have the reverse. The surgical treatment of these conditions as in the surgical treatment of conditions elsewhere, too frequently carries with its performance, the implied promise of cure, rather than the fact that it is but a single procedure in the general treatment of the disease. With this in view, operative means should be resorted to if such are shown to expedite actual or symptomatic recovery.

Relief from pain is the factor in bringing 90 per cent of patients to the physician. The patient with acute lower genital tract infection is no exception to the rule. Early relief to the vaginalitis or acute hydrocele is the most expedient means of accomplishing this end, and I know of no better method for so doing than by opening and draining the tunica vaginalis cavity. In giving relief to the pressure of fluid, venous and arterial obstruction is minimized. The short period of convalescence in such cases is, I believe, a valuable economic factor, and should be considered as a distinct advantage.

Carried out as they are, under gas-oxygen anesthesia, these operative procedures give one an opportunity to explore the tunica vaginalis cavity, open any apparent pus pocket in the body or head of the epididymus, as well as to treat in the appropriate manner, the vas or tail of the organ. Filling the upper genital tract with antiseptic solutions at this time, as we frequently have done, may have a preventive effect on the unaffected side, as well as a curative effect on the infected tract. Routine epididymectomy, I mention at this point only to condemn, for reasons quite obvious.

We have seen good results with the use of medical diathermy in the acute stages, and believe that this treatment gives promise of being of great benefit if properly used. What damage to the seminiferous tubules in man is done by heating the testes to the temperature used has not been demonstrated conclusively to date. I can neither condemn nor recommend this form of treat-

ment at the present time, although I am using it as an adjunct to other methods. Actinic therapy is of value, and has, in a few cases, appeared to be helpful. The vaccine treatment has given little or no results in my hands. The allergy of foreign protien has in certain cases appeared to hasten recovery in a fair percentage of cases. The intravenous injection of dyes, sodium iodide and the like, has never impressed me with being particularly efficacious.

The vast majority of acute epididymi occur and recover, symptomatically, through no fault of the physician. That method found to be used in dealing with all, to the exclusion of others is yet to be formulated.

MICHIGAN ANNOUNCES $175,000,000 ROAD SYSTEM

Grand Rapids, Mich.—Announcement is made by Secretary Hugh J. Gray of the Michigan Tourist and Resort Association that with the $18,000,000 to be expended in 1925 by the state in highway construction, Michigan has a $175,000,000 hard road system.

All of the funds provided under the Connelly $50,000,000 road bill have been expended, that fund having been completed in the past year and the 1925 expenditure is with new money raised by the state. This amounts to some eighteen millions of dollars, which will provide Michigan, and West Michigan, with additions to the great system of inter-connecting highways and trunk lines. In West Michigan it will open up resort sections that have hitherto not been entirely accessible to motorists. Virgin forests and lakes will become part of the itinerary of thousands of motorists through the efforts of the road builders.

Great tracts of territory near West Michigan's shore line will be the scene of summer sports which have already given West Michigan the name of "The Playground of a Nation."

There are at present two noted highways that stretch from the southern state line to Mackinaw at the north, known respectively as the West Michigan Pike and the Mackinaw Trail. Present and proposed road construction will offer new feeder lines to these highways, and new branch roads for vacationists. These will, however, remain as the backbone of the West Michigan highway system, in line with the state's original plan.

All indications point to an ever-increasing volume of motor traffic, and the state is preparing to take care of it well in advance of immedate requirements. Auto parks and free camping sites have been added and hotel facilities increased, until the organization for caring for visitors is more than adequate for the 1925 season. Whatever the traffic may be for the season of 1925, it will find West Michigan in a better condition than ever before to offer visitors the finest facilities for enjoyment of any summer country.

IT BEATS THE DEVIL

A colored preacher called on a white minister. He found the white man busy writing.

"What you-all doin'? he asked.

"I'm preparing notes for my sermon for Sunday."

The colored gentleman shook his head. "I certainly would never do dat, sir," he said. "De debbil am a-lookin' right over your shoulder and he knows everything you gwine to say and he am prepared for you. Now, I don't make no notes and when I gets up to talk, neder me nor de debbil hisself don't know what I'm goin' to say."

A BIT O' FUN

Stop and let the train go by—
It hardly takes a mniute.
Your car starts out again intact,
And better still—you're in it!

He "What ya think, girl, I'm out for spring practice!"

She—"Oh, Charlie, ain't that lovely. How far can you spring?"

SLIGHTLY DAZED

Speaking of white mule, two rustic sports were uncertainly flivvering their way home from the county seat. "Bill," said Henry, "I wancha to be very careful. First thing y'know you'll have us in a ditch."

"Me!" said Bill in astonishment. "Why, I thought you was driving."

BUYING WITH FORESIGHT

A darkey, being the father of twelve children, all of whom he had rocked in the same cradle, was putting the latest arrival to sleep.

"Rastus," said his wife, "Dat cradle am 'bout worn out."

"'Tis 'bout gone," replied Rastus, "You all bettah get 'nother, and get a good one—one dat'll last."

"Is your son out of danger yet?"

"No, the doctor is going to make three or four more visits yet."

A SKIN GAME

She: "What were you doing after the accident?"
He: "Scraping up an old acquaintance."

ASK DAD, HE KNOWS

Hebrew: "Any old rags today, sir?"
Henry: "No; my wife is away in the country."
Hebrew: "Ah! Any old bottles?"

HARD BOILED

Two negroes were lying behind a packing case on the dock at Brest, taking the labor out of the alleged Labor Battalion. Said one boastfully: "Boy, Ah comes f'um a tough breed. Mah ole man done cut his nails wif an ax an' brush his teef wif a file."

"Huh, ain't so tough. Mah ole man am a plumber, an twice a week he done shave hisself wif a blow torch."

TOO MUCH KICK

Jack: "So your father demurred at first because he didn't want to lose you."

Ethel: "Yes, but I won his consent. I told him that he need not lose me; we could live with him, and so he would not only have me, but a son-in-law to boot."

Jack: "M'm! I don't like that expression 'to boot'."

FINE WORDS DIDN'T WORK

Terrence: "'Tis a fine kid ye have there. A magnificent head and noble features. Could you lend me a couple of dollars?"

Pat: "I could not. 'Tis me wife's child by her first husband."

A man without a smiling face should not open a shop.

AN IMPORTANT CONSIDERATION

Lecturer: "Young man, all my success in life, all my financial prestige, I owe to one thing alone—Pluck. Take that for your motto, Pluck, Pluck, Pluck."

Student: "Yes, sir, but whom did you pluck?"

PUBLIC HEALTH ACTIVITIES

Edited By

MICHIGAN DEPARTMENT OF HEALTH

BACTERIOLOGICAL EXAMINATION FOR B. TUBERCULOSIS

In the past it has been the practice of the laboratories of the Michigan Department of Health to inoculate into guinea pigs all material except sputum submitted in cases of suspected tuberculosis. This has been done whether or not the specimen indicated such a procedure. The low percentage (see table below) of positive findings would indicate an unnecesasry slaughter of guinea pigs, for negative findings are of no value to clinicians when the specimens are not representative of the pathology. Space does not permit a detailed discussion of the physical character of specimens received in these laboratories. There are, however, two outstanding facts which require consideration; i. e., tubercle bacilli are always entangled in the coagulum of a fluid; and, tubercle bacilli are usually few in number in urine and fluids without coagulum; consequently, the more material submitted the greater the possibility of recovering the bacilli in the guinea pig.

In the future we plan to give careful consideration to the value of an animal inoculation with material submitted, and invite the physicians' consideration of our routine procedure which follows:

LABORATORY PROCEDURE*

I. Sputum.

1. Report physical findings[1].
2. Sterilize all specimens except those the character and history of which indicate making culture or animal inoculation. Add 10 c.c. of 1 per cent sodium carbonate in 1 per cent phenol solution to 5 c.c. sputum before sterilization if specimen is tenacious[2].
3. Remove supernatant fluid from sterilized specimens and make smears from the sediment using one slide for one smear, and stain by Ziehl-Neelson method.
4. Save slides and specimens until reports are checked by senior bacteriologist.
5. Report the absence or presence of cells and note predominating type.

Caution: Four or five acid-fast bacilli do not constitute a positive finding and should be confirmed. Swabs are not satisfactory for diagnosis.

6. Animal inoculation. Inoculate guinea pigs when requested by physician. Treat specimen with antiformin.

*From Routine Procedures, Bureau of Laboratories, Michigan Department of Health.

II. Urine. Urine is examined for tubercle bacilli, when tuberculosis is suspected, or clinical diagnosis is doubtful.

1. Report physical findings.
2. Smear: centrifuge entire specimen. Dilute if debris is present. Make smears from sediment. Use serum when necessary for fixing smears.
   (a) Stain smear by Gram's method[3].
   (b) Stain smear by Ziehl-Neelson.

Report "Acid-fast bacilli 'found' or 'not found' ". Smear findings are not conclusive and animal inoculation should be made.

3. Culture. Culture sediment as a control of material for animal inoculation, and for diagnosis of infections of the urinary tract other than tuberculosis, if specimen is catheterized urine.
   (a) Streak blood plate.
   (b) Streak Endo plate.
4. Animal inoculation. Make animal inoculation to confirm findings of acid-fast bacilli, or as further aid to diagnosis when acid-fast organisms are not found. Treat sediment with antiformin unless culture of sediment shows no growth.

III. Transudates and Exudates. (Various body fluids, ex. spinal, pleural, etc.) All specimens are examined for tubercule bacilli when clinical diagnosis is doubtful or tuberculosis is suspected.

1. Report physical findings[4].
2. Procedure.

(a) Clear fluid or fluid with flocculent sediment.
   (1) Centrifuge.
   (2) Smears. Make three smears.
      a. Stain by Wright's method for differential cell count.
      b. Stain by Gram's method.
      c. Stain by Ziehl-Nelson.
   (3) Culture. As in Urine.
   (4) Animal inoculation. As in Urine.

(b) Fluid with coagulum. (Characteristic of tuberculosis).
   (1) Digest coagulum.
   (2) Centrifcge, wash and make smear sediment.
   (3) Stain smear by Ziehl-Neelson method.
   (4) Inoculate guinea pig as a further aid in diagnosis.

(c) Pus. Pus is associated with so many pathological conditions other than tuberculosis that every specimen should receive general bacteriological examination, including an examination for ray fungus, before proceeding with technic for tubercle bacilli.
   (1) Treat with antiformin.
   (2) Centrifuge and wash sediment.
   (3) Make smear and stain by Ziehl-Neelson method.
   (4) Animal inoculation. Inoculate guinea pig to confirm findings of acid-fast bacilli, or as a further aid in diagnosis.

IV. Animal Inoculation.

1. General.

(a) All cages containing inoculated animals shall be labelled with tag giving date of inoculation, ear tag number, name of doctor, kind of specimen and name of worker. The outline on back of tag shall show characteristic color markings of the animal. The tag is to be securely fastened upon the cage.

(b) Each pig shall be identified by ear tag.

(c) Record of animal inoculation shall be kept on cards. This card records doctor's name and address, patient's name, kind of specimen, date received, preliminary findings, date of inoculation, amount of inoculum, method of inoculation, pig number, and name of worker. The animal inoculation card shall be kept in bacteriologist's file until animal is autopsied at which time it will be used for autopsy report. The card will then be turned into the office for reporting and filing.

(d) An animal inoculation card shall be filed for each animal used for experiment or research, as well as or diagnostic purposes. In the case of experimental work, the character and result of the experiment shall be recorded on card.

2. Procedure.

(a) Inoculate guinea pig weighing 350-450 grams with 1-2 c.c. saline emulsion of sediment subcutaneously in groin after bruising inguinal gland to render more susceptible to infection.

3. Diagnosis.

(a) Weigh pig at time of inoculation. All inoculated pigs shall be examined and weighed weekly, and observations recorded on back of animal inoculation card.

(b) Kill pig and perform autopsy when there is loss of weight and enlargement of glands.

(c) If pig is normal at the end of four weeks, report same to doctor and observe pig two weeks longer.

(d) At the end of six weeks, kill pig if necessary, perform autopsy and report, unless condition indicates further observation.

(e) Make positive diagnosis upon the presence of tubercles and demonstration of tubercle bacilli in spleen lymph nodes.

4. Examination shall be reported:

(a) "Date of inoculation, number of pig, guinea pig died, or was killed, B. tuberculosis 'found' or 'not found' at autopsy, date."

(b) "Date of inoculation, number of pig, guinea pig showed no symptoms to date, date of reporting. We would like to observe this animal for two weeks longer."

(c) If pig dies before end of incubation period, perform autopsy, and report "Guinea pig (number of pig), inoculated (date), died date) before expiration of incubation period. Cause of death."

COMMENT

Based upon the procedure as outlined we should get better results than those shown in the above table. We feel that if the clinician will give greater attention to the selection and collection of the material for laboratory diagnosis, the laboratory can render him a better service than heretofore.—C.C.Y.

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PERIODIC PHYSICAL EXAMINATIONS

One of the speakers at a Post Graduate Medical Conference announced that he was leaving the meeting to speak at a Parent-Teachers' Association meeting about periodic physical examinations. "If any of these folks come to your offices afterwards," he said, "don't tell 'em that this examination idea is bunk, and to call again when they're really sick." Evidently the doctor had experienced this sort of a reaction from previous attempts to enlighten the public. Even the most superficial review of the idea makes it plain that he was talking from well grounded facts when he urged the members

TABLE I.

A comparison of the laboratory results by animal inocu'ations for the years 1921, 1922, 1923, 1924.

Source	1921			1922			1923			1924		
	+	+—	Totals	+	+—	Totals	+	+—	Totals	+	+—	Totals
Spinal Fluid	3	3	13	1	0	12	3	0	13	2	1	18
Pleural Fluid	0	14	28	6	3	35	5	4	54	4	5	49
Knee Fluid	1	2	11	1	1	6	0	1	13	0	0	3
Ascitic Fluid	0	0	5	1	0	5	1	3	17	0	0	6
Shoulder Fluid	0	0	0	0	0	0	1	0	2	0	0	0
Elbow Fluid	0	0	0	0	0	0	0	0	2	0	0	0
Hydrocele Fluid	0	0	0	0	0	0	0	1	1	1	0	1
Seminal Fluid	0	0	0	0	0	1	0	0	0	0	0	1
Abscesses	0	0	0	0	0	0	0	0	0	1	1	15
Feces	0	0	1	1	0	4	0	0	5	3	0	4
Sputum	0	2	13	0	0	12	2	1	35	1	0	24
Glands	0	0	0	0	0	0	3	1	12	1	0	4
Not given	6	5	16	8	0	21	6	0	24	1	0	9
Urine	3	14	75	6	4	79	8	4	128	5	2	129
Tonsils	0	0	0	0	0	0	0	0	0	0	0	4
Bile	0	0	1	0	0	0	0	0	0	0	0	0
Totals	13	40	163	24	8	175	29	15	306	19	9	260
Percentage	8%	20%		13%	4.5%		9.4%	5%		7.3%	3%	

+=Tubercle bacilli recovered from guinea pig

+—=Death of guinea pig before expiration of incubation period. Note the decrease beginning in 1922 because of improved housing conditions in new animal quarters.

of the Conference not to belittle the importance of physical examinations at stated intervals.

Much has been said and written about the results of the draft examinations during the World War. The astonishingly high percentages of young men who were unfit for military service have been quoted by hundreds of lecturers on sociology and public health, and used in print as the reason for all sorts of shortcomings—most often to prophesy the future downfall of church and state unless something is done. The majority of these pessimistic utterances have been rather vague and have not carried with them any definite information as to what the diseases and defects were. The following table compiled from "Defects Found in Drafted Men," War Department, U. S. A., is a resume of the findings from examining Michigan men. Only defects which occurred at the rate of 0.5 per 100 men, or more frequently, are included.

MICHIGAN DRAFTED MEN

Name of Defect	Number per 100
Tuberculosis (pulmonary and suspected)	1.99
Tuberculosis (all forms)	2.21
Syphilis	.85
Gonococcus infection	3.54
Veneral diseases (all)	4.45
Veneral diseases (all), alcoholism and drug addiction	4.52
Curvature of spine	.51
Goitre, exophthalmic	.69
Goitre, simple	1.14
Defective hearing	.50
Deaf and dumb, mute; deaf; defective hearing	.65
Mental deficiency	1.14
Mental alienation	1.39
Myopia, defective vision, astigmatism, and hyperopia	3.26
Blindness in one eye, or in both eyes	.77
Myopia, defective vision, astigmatism, hyperopia, blindness	4.04
Otitis media, perforated ear drum	.96
Tonsillitis, hypertrophic	1.03
Endocarditis and valvular diseases of the heart	4.36
Cardiac hypertrophy, cardiac dilation	.66
Organic diseases of the heart	5.03
Tachycardia	.93
Hemorrhoids, varicocele, varicose veins	.89
Defective and deficient teeth, with dental caries	1.79
Hernia	2.48
Enlargement of inguinal rings	1.92
Hernia and enlargement of inguinal rings	4.39
Fractures	.76
Ankylosis (bony ankylosis or fibrous)	.76
Hammer toe and hallux valgus	.61
Pes planus	11.14
Pes planus and pronated foot	11.48
Foot deformity not specified; pes cavus	.62
Metatarsalgia	.55
All foot deformities	13.25
All hand deformities	.91
Miscellaneous deformities	.77
Underweight	1.79
Defective physical development, deficient chest measurement, underweight, underheight	2.25
Mechanical defects (all)	22.25

The list of abnormal conditions shows the clinician what he may expect to encounter when he examines supposedly well young adults.

A common finding will be pes planus in at least eleven out of every hundred patients, and heart disease will be frequently discovered. Perhaps the foremost impression the compilation gives is its length, and the great variety of diseases and defects. The periodic physical examination must be inclusive, and must be thorough.

The army tabulation is applicable only to young adults. The relative frequency of pathological conditions would be quite different earlier in life. The 6797 children under five years of age examined by the Michigan Department of Health Keep Well Institute in 1923 and 1924 are a representative sample of the state's infant and preschool population. The results of these examinations are as follows:

INFANTS AND PRESCHOOL CHILDREN

Name of Defect	per 100 Number
Underweight 10 per cent or more	20.2
Malocclusion	4.0
Decayed teeth	17.1
Diseased tonsils	24.3
Enlarged adenoids	13.3
Enlarged lymph glands	11.0
Enlarged thyroid	5.3
Anemia	4.2
Skin disease	5.1
Eye defects	2.4
Ear defects	3.5
Respiratory disease	2.5
Bronchoadenopathy	2.5
Persistent thymus	.2
Hear murmur	4.0
Rickets	5.8
Hernia	4.4
Phimosis	6.8
Bone and muscle defects	12.1
Congenital defects	3.9
Mental defects	1.0
Miscellaneous	3.4

The average Michigan family thinks very little about the prevention of disease. During vaccination campaigns, it was found that 64.84 per cent of those attending the clinics had never been vaccinated for smallpox before. It is known that only ten per cent of the children of the state have been immunized against diphtheria. The percentage of those vaccinated against typhoid fever is much smaller.

The average young man examined for military service showed at least one defect. Infants and preschool children showed an average of 1.57 defects per child. In other words, practically every individual in these age groups will show some abnormality—and there is no reason to believe that conditions are any different at other ages. The

physician should discover curable diseases and correctable defects whenever he examines a supposedly healthy patient. "Well" people are seldom entirely well.

Chalmers J. Lyons, D. D. Sc., of Ann Arbor, has been appointed by Governor Groesbeck as a member of the state advisory council of health, taking the place of Dr. Frank M. Gowdy of St. Joseph, whose term expired.

Dr. Lyons is professor of oral surgery in both the medical and dental schools of the University of Michigan, and is a past president of the Michigan State Dental Society.

MARCH REPORT

The report for March is a very satisfactory one, with all but three diseases showing a decrease. An increase is noted in the number of cases of pneumonia and of tuberculosis reported, and a slight increase in whooping cough.

Particular attention is invited to the sharp decrease in the number of cases of diphtheria. This falling rate has now persisted for three months. In the first three months of this year there have been reported 1,059 cases as compared to 2,229 in 1924. This is a decrease of 52.5 per cent. While a great deal of work has been done for the prevention of this disease, it is all too recent to account for this sharp decline. Reports indicate that there is an epidemic of diphtheria in Europe at this time, but the United States seems to be enjoying a period of very low rates. The history of the disease seems to indicate that it is usually endemic, but without marked periodicity. It is to be hoped, however, that the people and medical profession will take advantage of this reduced incidence to push immunizing campaigns and be better enabled to control the increased incidence we may expect in the fall.

The death rate for the first two months is very satisfactory, showing a rate of 12.6 per thousand population as compared with 15.9 for the same period in 1924.

The birth rate is 24.3 as compared with 23.3 for the same period of 1924.

The death rate for these two months of 12.6 is only .5 higher than the rate for the entire year 1924, in spite of the fact that the rate covers the two months which are always high on account of the increased incidence of respiratory affections in the winter months.

In the March issue of the Journal the statement was made that no licenses had been issued for biological products for the prevention or treatment of scarlet fever. Since that publication, the United States Hygenic Laboratory has issued a blanket license for scarlet fever antitoxin to certain biological houses. Under the regulations of the licensor, the scarlet fever antitoxin can be made either by the Dochez or Dicks method and can be labeled as scarlet fever antitoxin, concentrated or unconcentrated.

Controlled experiments have demonstrated conclusively the therapeutic value of concentrated scarlet fever antitoxin. The value of unconcentrated antistreptococci serum, now called unconcentrated scarlet fever antitoxin, is questionable when the ultimate effect of the product on the patient is considered. There is no essential difference between scarlet fever antitoxin, unconcentrated, and antistreptococci serum which has been on the market for 25 years, except that the streptococcus scarlatina, identified by its toxin production, is used to immunize the horses. Before any physician uses these products in his practice, he should carefully read the literature which has appeared in the last year on the subject of scarlet fever prophylaxis and treatment with specific sera.

Licenses have not been issued for the Dick toxin for prophylaxis of scarlet fever, although the Dick toxin is the basis for the licensing of the antitoxin.

Ionia County no longer fears diphtheria. A county wide protection campaign was completed on April 10. Fifty-five hundred children—60 per cent of the population under 15 years of age—received three toxin-antitoxin treatments. Since the majority of deaths from diphtheria occur in childhood, the possibility of there being any appreciable mortality from this cause in Ionia County is very remote.

No severe reactions following toxin-antitoxin administration were reported. The number of individuals treated is sufficient proof for the statement that diphtheria immunization is harmless. Patients can be promised protection without the expectancy of constitutional disturbances after toxin-antitoxin treatments.

The Washtenaw County Medical Society has sponsored, and is carying out a diphtheria protection campaign. Similar campaigns have been undertaken in many cities and towns. Like Ionia County, all these communities will soon regard diphtheria as an exceedingly rare disease. Unfortunately, toxin-antitoxin immunization has received so little attention from the state as a whole that there is no immediate prospect of diphtheria cases becoming unusual enough to warrant reporting them as medical curiosities. Instead of such reports, Michigan's excessively high mortality from diphtheria will continue to

be an appropriate topic for discussion at medical meetings. We believe that diphtheria should be relegated to ancient history—and we are sure that most of the parents of Michigan children concur in this opinion. But we realize that unless every physician tells his patients about immunization, and gives them toxin-antitoxin treatments, such an ideal is outside the realm of possibility.

PREVALENCE OF DISEASES

MARCH REPORT

Cases Reported

	Feb. 1925	March 1925	March 1924	Average
Pneumonia	596	849	665	949
Tuberculosis	535	406	216	473
Typhoid Fever	31	38	51	62
Diphtheria	302	339	636	680
Whooping Cough	440	364	348	556
Scarlet Fever	1,368	1,717	1,866	1,363
Measles	692	771	3,277	2,669
Smallpox	59	80	760	474
Meningitis	12	19	11	17
Poliomyelitis	8	3	3	3
Syphilis	1,067	1,301	1,057	794
Gonorrhea	739	843	735	717
Chancroid	8	11	12	14

CONDENSED MONTHLY REPORT

Lansing Laboratory, Michigan Department of Health, February, 1925.

	+	—	+—	Total
Throat Swabs for Diphtheria	.....	.....	....	3829
Diagnosis	78	762	....	.....
Release	151	475	....	.....
Carrier	33	2283	....	.....
Virulence Tests	26	21	....	.....
Throat Swabs for Hemolytic Streptococci	.....	.....	....	3604
Diagnosis	819	285	....	.....
Carrier	284	2216	....	.....
Throat Swabs for Vincent's	16	814	....	830
Syphilis	.....	.....	....	11652
Wassermann	1033	4769	89	.....
Kahn	1165	4531	65	.....
Darkfield	.....	.....	....	.....
Examination for Gonococci	172	1606	....	1778
B. Tuberculosis	.....	.....	....	472
Sputum	49	391	....	.....
Animal Inoculation	2	30	....	.....
Typhoid	.....	.....	....	137
Feces	6	64	....	.....
Blood Cultures	.....	16	....	.....
Urine	1	4	....	.....
Widal	7	39	....	.....
Dysentery	.....	.....	....	.....
Intestinal Parasites	.....	.....	....	28
Transudates and Exudates	.....	.....	....	199
Blood Examinations (not classified)	.....	.....	....	321
Urine Examinations (not classified)	.....	.....	....	327
Water and Sewage Examinations	.....	.....	....	318
Milk Examinations	.....	.....	....	101
Toxicological Examinations	.....	.....	....	6
Autogenous Vaccines	.....	.....	....	11
Supplementary Examinations	.....	.....	....	310
Unclassified Examinations (including Dick test surveys)	.....	.....	....	1632
Total for the Month	.....	.....	....	25555
Cumulative Total (Fiscal year)	.....	.....	....	190500
Increase over this Month last year	.....	.....	....	6804
Outfits mailed out	.....	.....	....	15911
Media Manufactured, c.c.	.....	.....	....	422470
Diphtheria Antitoxin distributed, units	.....	.....	....	19243000
Toxin Antitoxin distributed, c.c.	.....	.....	....	45065
Typhoid Vaccine distributed, c.c.	.....	.....	....	843
Silver Nitrate Ampules distributed	.....	.....	....	5176
Examinations made by Houghton Laboratory	.....	.....	....	1698

HOW X-RAYS ACT ON TUMORS AND CANCER

How the X-ray acts on tumors and cancers is explained to its readers by *Hygeia,* popular health magazine publisher by the American Medical Association, in its April issue. Says the magazine:

The present opinion as to the action of X-rays on tumor cells is that there is a directt killing action on the cells themselves and a secondary starvation action plus an arrest of the flow in the lymphatic vessels in the region treated.

All malignant tumors have a large number of cells of a young type which multiply rapidly and perhaps never show the appearance under the microscope of mature cells. These young cells are more unstable than the mature cells; when acted on by a proper dose of X-rays are actually broken down before the normal cells. The trick of the application is to take advantage of the difference in sensitiveness to the X-ray and give a dose that will kill the tumor cells and only perhaps stimulate the normal.

One secondary manner of affecting tumor by X-rays is by the production of inflammation in the lining walls of the very finest blood vessels. This diminishes the blood flow to the tumor cells and virtually starves them.

Repeated X-ray doses also act in this manner on the lymphatic channels and as cancer spreads mainly by the lymph vessels its extension to adjacent tissues is more or less blocked.

SAYS WORKMAN WANTS HEALTH PROTECTION

The American workman is not so much after the "almighty dollar" as he is after fair play. To support this contention, Lee K. Frankel, vice president of the Metropolitan Life Insurance Company, writing for the April *Hygeia* on "The Health of the Worker," says:

The vocational director of a community welfare organiation was discussing zwith a man two positions with two different brass manufacturing companies, one paying several dollars a week more than the other. To the director's surprise, the man showed a preference for the job that paid the lesser salary.

"I'll try this one," he said. "They has a heart and takes care of their men."

The workman wants reasonable hours, healthful working and living conditions and suitable time for recreation, Mr. Frankel declares.

FINDS DEAF PERSONS VERY INTROSPECTIVE

Deaf persons are the most introspective individuals in the world. Psychologically they are turned upside down.

So says Dr. Harold Hays, New York specialist in ear disorders, in the April *Hygeia,* popular health magazine published by the American Medical Association.

Almost all deaf persons have a mental twist that makes them think they should be ashamed of their infirmity, Dr. Hays declares. The result is that they won't help themselves, either by lip reading or by a hearing device.

Don't forget that every family tree has its sap.

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MAY, 1925

Report Malpractice Threats Immediately to Doctor F. B. Tibbals, 1212 Kresge Building, Detroit, Michigan.

Editorials

WHAT IS A CHIROPRACTIC? SOME LEGAL DEFINITIONS OF CHIROPRACTIC

The Kansas chiropractor was the first to be described by statute. He had, and apparently has, nothing more to do with the backbone than with any other part of the body, but is nothing more nor less than an osteopath. The Kansas act of 1913 provides that, "Any chiropractor who has complied with the provisions of this act may adjust by hand any displaced tissue of any kind or nature * * * *."

In the Arkansas act of 1915 we catch a glimpse of the backbone, and that is all: "Said license, when granted by said board of chiropractic examiners shall entitle the holder thereof to adjust by hand the displaced segments of the vertebral column and *any displaced tissue in any manner related thereto* * * * *."

The North Dakota law of 1915 gives the chiropractor full play over the entire body: "Any chiropractor who has complied with the provisions of this act may adjust *any displaced tissue of any kind or nature* * * * *."

The Oregon law of 1915 also gave the chiropractor the right to roam over the entire body, so long as he limited himself to "the bony framework," although it laid special stress on the vertebrae: "Chiropractic is defined as that system of adjusting the articulations *of the bony framework of the body,* especially the asymmetries of the vertebrae * * *."

The Colorado act of 1916 brings in two new features, palpation and nerve tracings: "The practice of chiropractic as used in this act is hereby defined to mean the treatment of disease or a morbid condition of human beings by palpation, nerve tracings and adjustment of the vertebrae by hand."

The North Carolina act of 1917, after recognizing the spine as the backbone of chiropractic, seems to give full play to the chiropractor:

"Chiropractic is hereby defined to be the science of adjusting the cause of disease by realigning the 24 movable vertebrae of the spine, releasing pressure on the nerves radiating from the spine to all parts of the body, and allowing the nerves to carry their full quota of health current (nerve energy) from the brain to all parts of the body. * * * *

"Any person obtaining a license from the said board of chiropractic examiners shall have the right to practice that science known as chiropractic, *in accordance with the method, thought, and practice of chiropractors,* but shall not prescribe for or administer to any person any medicine or drugs, nor practice osteopathy or surgery."

The Connecticut act of 1918 provides: "For the purpose of this chapter, the practice of chiropractic shall be understood to be the adjustment by hand of any or all of the articulations of the human vertebral column."

The people of Montana, through the initiative, defined Montana chiropractic in 1918 as follows: "Chiropractic is the science that teaches that disease results from anatomic disrelation, and teaches the art of restoring anatomic relation by a process of adjusting by the use of the hand. No other means of securing health shall be construed to be chiropractic except the application of the inherent qualities at the time in the patient or appertaining to the chiropractor.

But the Idaho definition of 1918 is broader: "Any licentiate under this act may adjust any displaced segment of the vertebral column *or any tissue related thereto* * * *."

Minnesota, in 1919, still gave the chiropractor leeway: "For the purpose of this act, chiropractic is hereby defined as being the science of adjusting any *abnormal articulation of the human body,* especially those of the spinal column * * * *."

Florida in 1919 apparently had no reason to believe that chiropractors were limiting themselves to the backbone, for it enacted: "Any chiropractor who has complied with the provisions of this act may adjust by hand *any displaced tissue of any kind or nature or otherwise practice according to the tenets of his or her respective school..* * * * *."

The Nebraska act of 1919 limits the chiropractor to the backbone: "Any chiropractor

who has complied with the provisions of this article and obtained a license may adjust by hand any articulation of the spine * * * *."

The Vermont act of 1919 does not define chiropractic.

The statute enacted by the state of Washington in 1918 provides that a licensed chiropractor "may adjust by hand any articulations of the spine * * * *."

The Maryland act of 1920 limits the activities of the chiropractor to adjustments by hand of the articulations of the spinal column.

The New Jersey definition of 1920, repealed by the act of 1921, is worth quoting in full:

"The term chiropractic, when used in this act, shall be construed to mean and be the name given to the study and application of a universal philosophy of biology, theology, theosophy, health, disease, death, the science of the cause of disease and art of permitting the restoration of the triune relationships between all attributes necessary to normal composite forms, to harmonious quantities and qualities by placing in juxtoposition the abnormal concrete positions of definite mechanical portions with each other by hand, thus correcting all subluxations of the articulations of the spinal column, for the purpose of permitting the recreation of all normal cyclic currents through nerves that were formally not permitted to be transmitted, through impingement, but have now assumed their normal size and capacity.

Arizona, however, was not seduced by the glories of the New Jersey definition and stuck to the backbone; in its act of 1921 it provided: "Any chiropractor who has complied with the provisions of this act may adjust by hand any articulations of the spinal column * * * *."

The Georgia act of the same year, 1921, is a type of act that has been recently sought in other jurisdictions, intended to allow chiropractors to expand their fields of activity, so long as they do not prescribe or administer medicine, perform surgery, practice obstetrics, or osteopathy. The act authorizes the Georgia chiropractor to "adjust patients in Georgia, according to specific chiropractic methods." There is no reference to the backbone and no prohibition on the use of hydrotherapy, electrotherapy, thermotherapy, etc.

The Iowa act of 1921 does not limit the chiropractor to the backbone, but provides: "The practice of chiropractic shall be deemed to be the adjustment by hand of the articulations of the spine and *other incidental adjustments* according to chiropractic methods."

The New Hampshire act of 1921 does not limit the chiropractor to the backbone; it gives him jurisdiction over the sacro-iliac articulations. It reads: "Chiropractic is herein defined to be the science of adjusting the cause of disease by realigning by hand the 24 movable vertebrae of the spinal column or misalignments of the sacro-iliac articulation, * * * *."

The New Mexico act of 1921 contains interesting evidence of what the chiropractors will do when they get a chance. It seems effectually to dispose of the pretentions of the chiropractor that the chiropractic school attributes all illness to spinal displacements and believes that every human ailment can be cured by replacements. The New Mexico definition is:

"Said license, when granted by said board of chiropractic examiners, shall entitle the holder thereof to diagnose and treat diseases, injuries, deformities or other physical or mental conditions, *by the use of any or all methods as herein provided,* such as palpating, diagnosing, adjusting and treating diseases, injuries and defects of human beings by the application of manipulative manual and mechanical means, including all natural agencies imbued with the healing act, such as food, water, heat, cold, electricity, vacuum cupping and drugless appliances, without the use of drugs or what are commonly known as medicinal preparations or in any manner severing or penetrating any of the tissues of the human body known as surgery * * * *."

Section 4, *chap.* 110, *laws* 1921.

Probably the Oklahoma act of 1921 means the same thing as the New Mexico act just set forth; at any rate, one is as sensible as the other. The Oklahoma act provides: "Said license when granted by said board of chiropractic examiners, shall entitle the holder thereof to practice the science of chiropractic, herein defined to be as follows: chiropractic is hereby defined to be the science that teaches health in anatomic relation and disease or abnormality in anatomic disrelation, and included hygienic and sanitary measures incident thereto."

The South Dakota act of 1921 sticks closely to the chiropractic backbone: "Chiropractic is hereby defined to be the adjustment by hand of the articulations of the human spine and *other incidental adjustments* according to the science of chiropractic."

The California act, which became a law under the initiative in 1922, is one of the forward looking acts that seeks to vest in the chiropractors themselves the right to determine from year to year what chiropractic is. The license of the chiropractor, the law provides, "shall authorize the holder thereof to practice chiropractic in the state of California *as taught in chiropractic schools or colleges;* and, also, *to use all necessary mechanical, hygienic and sanitary measures incident to the care of the body,* but shall not authorize the practice of medicine, surgery, osteopathy, dentistry or optometry, nor the use of any drug or medicine now or hereafter included in materia medica."

The same adroit effort to make the chiropractic schools of the country arbiters of what the chiropractors of the country may lawfully do crops out in the Maine act of 1923 as follows:

"Such certificate shall entitle the person to whom it is granted to practice chiropractic in any county

in this state, in all its branches *as taught and practiced by the recognized schools and colleges of chiropractic,* but it shall not authorize the holder to practice obstetrics *so far as the same relates to parturition,* nor to administer drugs or perform surgical operations *with the use of instruments except as now allowed by statute,* provided, however, that nothing in this act shall be construed to prohibit any legally registered *doctor* of chiropractic in this state from practicing surgery after having passed a satisfactory examination therein before the state board of medical examiners."

The Tennessee act of 1923 limits the chiropractor to the backbone: "Chiropractic is defined as the science of palpating, analyzing, and adjusting the articulations of the human spinal column by hand." * * *

W. C. Woodward.

(Ye Editor believes that the proper and simple definition of chiropractic is "BUNK.")

ANNUAL CLINIC OF THE DETROIT COLLEGE OF MEDICINE AND SURGERY

One of the most outstanding programs ever arranged for the annual clinic week given by the Detroit College of Medicine and Surgery has been completed. The opening day is Monday, June 15th, 1925.

Men of international reputation will address the meetings or give clinics in six of the leading hospitals of Detroit. Each of the hospitals will take active parts in the program, their staffs having arranged a varied number of clinics and demonstrations. Class reunions will take place; all classes ending in "0" or "5". Demonstrations will be given at the college building Wednesday, June 17th. Dr. J. B. Deaver of Philadelphia, will address the graduating class at the commencement exercises Thursday evening, June 18th. A record-breaking registration is anticipated.

Dr. Roger S. Morris of Cincinnati, will give a clinic on Medicine; Dr. J. B. Deaver of Philadelphia, Surgery; Dr. F. R. Rackemann, Boston, Asthma and Hay Fever; Dr. B. C. Hirst, Philadelphia, Gynecology; and Dr. J. B. Squier, New York, on Urology.

On Wednesday evening there will be a subscription dinner, to be followed by annual meeting of the Alumni Association.

Following is the program for the week:

At Grace Hospital—Monday, June 15th, 1925.
In charge of Dr. H. R. Carstens.
9 to 11 a. m.—Staff Clinics.
11 to 1 p. m.—"Asthma and Hay Fever"—Dr. Francis M. Rackemann, Boston.
1:15 p. m.—Luncheon, guests of Grace Hospital.
8 p. m.—Wayne County Medical Society Building. Medical paper by Dr. Roger S. Morris, Cincinnati.
At Receiving Hospital, Tuesday, June 16th, 1925.
In charge of Dr. I. G. Downer.
9 to 11 a. m.—Staff Clinics.
11 to 1 p. m.—Medical Clinic—Dr. Roger S. Morris, Professor of Medicine, University of Cincinnati.
1:15 p. m.—Luncheon, guests of Receiving Hospital.
In the evening, class reunions—all classes ending in "0" or "5".
At Providence Hospital, Wednesday, June 17, 1925.
In charge of Dr. Wm. P. Woodworth.
9 to 11 a. m.—Staff Clinics.
11 to 1 p. m.—Gynecological Clinic—Dr. Barton Cook Hirst, Philadelphia.
At the Detroit College of Medicine and Surgery.
2 to 4 p. m.—Demonstrations.
6 p. m.—Subscription Dinner, followed by the Annual Meeting at 8 p. m.
At Harper Hospital, Thursday, June 18th, 1925.
In charge of Dr. R. H. Moehlig.
9 to 11 a. m.—Staff Clinics.
11 to 1 p. m.—Surgical Clinic—Dr. J. B. Deaver, Philadelphia.
1 p. m.—Luncheon, guests of Harper Hospital.
At Herman Kiefer Hospital.
2 to 4 p. m.—Clinics.
8 p. m.—Graduation exercises of Detroit College of Medicine and Surgery. Graduating address by Dr. J. B. Deaver.
At St. Mary's Hospital, Friday, June 19th, 1925.
In charge of Dr. George C. Burr.
9 to 11 a. m.—Staff Clinics.
11 to 1 p. m.—Urological Clinic—Dr. J. Bentley Squier, New York.

AUGUST VON WASSERMANN

By the

United States Public Health Service

The death of Professor August von Wassermann on March 16, 1925, has deprived the medical world of one of its ablest investigators and the human race of a benefactor. Through his continued studies he has made several lasting contributions to the body of knowledge basic to general race betterment.

Wassermann was born February 21, 1866, at Bamberg, Bavaria. His father was a royal banker who gave his son the opportunity to gain a sound general and professional education. Wassermann studied medicine at the universities of Erlangen, Munich, Vienna and Strassburg, receiving his degree from the last named institution in 1888. He then became assistant for infectious diseases at the Koch Institute of the Charite at Berlin, gaining the title of professor in 1898. In 1901 Wassermann was given an appointment to the University of Berlin as Professor Extra-Ordinary (Privatdozent), a position carrying with it no emoluments outside of the opportunity to teach and experiment in the university medical school and its laboratories. Within a year his unselfish devotion and keen interest in the science of medicine brought him a full professorship. In 1906 he assumed the duties as head of the Division for Experimental Therapy and Serum Research at the Royal Institute for Infectious Diseases at Berlin. In 1913 he added to his duties those of director of the newly founded Kaiser Wilhelm Institute at Dahlem, near Berlin, an institute for experimental therapeutics.

As a mark of appreciation of beneficial public service the title of Secret Councillor (Geheimrat) was conferred upon Wassermann in

1907; he was also awarded the Japanese Order of the Holy Treasury, the Turkish Order of Ozman, the Spanish Order of Elizabeth the Catholic, and the Reichs Adler Order.

Professor Wassermann was a prolific contributor to medical literature. As an introduction to Ebstein and Schwalbe's Handbook of Practical Medicine he has written an able discussion concerning general studies on infectious diseases, especially influenza. He was also a regular contributor to the Eulenburg Encyclopedia, writing on immunity and serum therapy. He published many articles on newer subjects, such as hemolysin and precipitin. His best known works are contained in the Handbook of Pathological Micro-organisms, which he published in collaboration with Kolle.

Wassermann made a far-reaching and important contribution to forensic medicine by "his precipitin reaction which distinguishes the blood of men and animals by differentiating albumin bodies contained therein."

His greatest discovery, the complement fixation test in syphilis, was announced in 1906. This, the so-called "Wassermann Test," is an application to syphilis of a general reaction discovered by Bordet and Gengou.

An appreciation of the vast importance of the use of the Wassermann test as an aid in the diagnosis and treatment of syphilis may be gleaned from data collected and compiled by the Division of Venereal Diseases of the United States Public Health Service. The 165 laboratories of State Health Departments and State Institutions, scattered throughout every state in the union and included in this investigation, administered 990,130 Wassermann tests in 1923. This figure, when reduced to more evident terms, means that these 165 state laboratories have given one Wassermann test per every 106 people in the United States. The importance of the Wassermann test is further enhanced by the fact that these figures do not include many Wassermann tests made by private laboratories.

Though Wassermann's name has been connected with important researches dealing with the problems of cancer and tuberculosis, he has enshrined his name in medical annals by virtue of his work in the diagnosis and treatment of syphilis. Wassermann, a distinguished pupil of Koch and Ehrlich, has earned the name of a great benefactor of humanity.

MICHIGAL HOSPITALS

The A. M. A. Council on Medical Education and Hospitals has prepared some very pertinent statistics on hospitals and internes covering 1924. We are imparting the Michigan figures in this report:

Michigan has 73 hospitals with 3814 beds and open staffs. There are 33 hospitals with 3,468 beds that have closed staffs. There are 78 hospitals with 4,889 beds that do not admit having either open or closed staffs. Our state hospital resources are 184 hospitals with 12,171 beds.

Michigan has a gross total of 252 hospitals varying in size of less than ten beds to 20 with over 300 beds and a grand total of 26,770 beds. There are 7,370 hospitals in the United States with a total bed capacity of 813,926. In 1923, 64.1 per cent of these beds were occupied. Michigan has 63 counties that have hospital facilities and 20 counties without hospitals. These coutnies without hospitals are in sparcely settled districts of the upper penninsula and the thumb and upper area of the lower penninsula. In these counties without hospitals there are 189 physicians and a population of 235,615 for the twenty counties.

Interne service is an important educational feature. Experience has demonstrated the efficient interne service calls for one interne for every 24 patients. Michigan hospitals are utilizing the services of 333 internes, of which number 108 are graduates of Michigan schools.

These are cold figures, but on reflection furnish important factors that demonstrate the trend of modern practice as well as the role that hospital accommodations wield in our professional and public life. The hospital has been developed and extended by the demands of the public and the advancements of our science. As we as a profession have progressed, so, too, must our hospitals advance. Standards are being created, administration efficiency is being perfected, morbidity and mortality rates are being lowered and service is being elevated. We have progressed, but there is still much to be done. Our hope is that the profession will recognize this tremendous problem and exercise a directing as well as controlling influence upon the hospitals of Michigan.

ORIGINAL ARTICLES

The Journal is dependent upon our members for the contribution of original articles. From a scientific viewpoint the Journal will be just as valuable, just as useful and just as interesting as our members make it by the articles that they contribute.

If you receive an issue, peruse it and then toss it aside, either as uninteresting, or of little help to you, whose fault is it? Certainly not the Publication Committee's or the Editor's for they cannot supply the original scientific articles from their own pens for every issue. The fault must and will lie at the door of our members. The type, field, subject-matter and quality of the Journal and its scientific standing in the field of medical literature is and will ever be determined by the contributions of the

medical men of Michigan. That is a definite obligation that rests upon our members. It is a matter that should be one of interest and pride and it is for the purpose of re-awakening that interest and pride that we are dwelling upon the subject in this editorial.

The Publication Committee and the Editor want scientific, original articles that reflect the work, thought, progress and achievements of the medical men of Michigan. We desire them to be scientific in full degree, we also want them to embrace practicality. We want them to cover the entire field of medicine in theory, research, diagnosis, experiences, results and to reflect that which characterizes modern scientific medicine.

We want these articles to eminate from those who are affiliated with some of our well known hospitals. Members of the staffs of University, Harper, Grace, Providence, Highland, Hurley, Ford, Saginaw, Battle Creek, Kalamazoo, Grand Rapids, Bay City, Calumet, Soo Hospitals—yes, all hospitals are invited to contribute such original articles. To other men, not associated with hospitals, who are in the smaller communities, possibly in the "wilds," if we still have such places, are also urged and invited to send in their experiences, medical observations and practices. We are not soliciting thesis, quotations or collections of reviews. What is desired is a series of compact, to the point papers that contain worth-while, helpful data and information. We feel that some of our hospitals could well make definite commitment, to send in for publication, a certain number of original articles during each year. Staff meetings are held, papers are read at those meetings, let someone be delegated to select from those papers the ones that represent scientific value and which will not only be of interest to all our readers, but which will also reflect the scientific activities of the state.

The Publication Committee and the Editor desire the Journal to be of assistance to every reader. We want to make it bigger and better. We want you, reader, to find in it the help that you are looking for. It is to that end that we solicit the contribution of original articles. We can use ten or twelve in each issue and each article submitted will be made to appear at the earliest possible date. Your assistance will aid us to send you a Journal that will evoke your personal interest and give you cause for just pride.

AS OTHERS SEE US

The following is lifted from "The Nation's Health":

The Michigan Public Health Education program was formally organized in 1922 under the direction of the Joint Committee on Public Health Education. This committee was formed on the initiative of the Michigan State Medical Society, and its undertakings have been based upon the belief that the best results would be obtained by the closest and most cordial cooperation between the medical society and the University of Michigan in matters pertaining to education to the broad field of public health. Upon this basis the original Joint Committee has associated itself with the Michigan Department of Health, Detroit College of Medicine and Surgery, Michigan State Dental Society, Michigan Tuberculosis Association, Michigan State Nurses' Association, the Michigan State Conference of Social Work, and the Wayne County Committee on Education, of Detroit.

The work that the Joint Committee has set itself to do is primarily educational and is based upon the proposition that in a democracy public health is a public concern. Sound public policy and private conduct will result from sound public and private opinion and these will come only by getting to the men and women of the community an adequate knowledge of ascertained facts in regard to health and disease. To further these purposes the Joint Committee is prepared to supply speakers of recognized authority and known integrity equipped to present to the public the facts concerning a great variety of conditions important to public health.

As the Joint Committee is concerned only with education, this committee will rely upon the convincing power of the truth and will not permit attacks upon those who hold other views.

It is the desire of the Joint Committee on Public Education to furnish speakers free of charge to all organizations of the state interested in public health education. The Joint Committee, through the extension division of the University of Michigan, is prepared to cooperate with chambers of commerce, luncheon clubs, superintendents of schools, parent-teacher associations, granges, farmers' clubs, literary societies, women's clubs, churches and such other organizations as may be interested in general or local health problems.

These health lectures are given free to the public. In other words, so far as local communities are concerned, this health service is furnished without charge, with the understanding that the lectures shall be free to the public and advertised as such. The only obligation resting upon the community receiving the service is that the local committee shall provide a suitable hall and shall take care of the distribution of advertising material, which is furnished by the extension division.

The health education work during the first year, 1922-23, was in a measure of an experimental nature. The number of speakers available was limited and the plans for getting these speakers in contact with the public were merely tentative. During 1923-24, however, the work was well under way. The records tabulated

make clear that there is an unusual interest on the part of the people of the state in lectures of this sort. The attendance during the past year shows an increase of 160 per cent over that of the preceding year.

The following is a brief summary of the report of the year's work, as submitted to the Joint Committee:

HEALTH LECTURES, 1923-24

Total number of health lectures assigned	271
Average attendance per lecture	289
Total attendance upon health lectures	79,000
Increase in health lectures assigned over that of the preceding year	48%
Increase in attendance upon health lectures over that of the preceding year	160%

The outlook for a very much extended program of health lectures for the present year, 1924-25, is very encouraging. The staff of health lecturers have been very largely increased, and the number of calls for this service increasingly urgent. One of the great difficulties which presents itself so far as the administration of the work is concerned is to secure speakers enough to meet the demand. At present something like 120 speakers are listed, but there should be in Michigan from 300 to 500 speakers to enable the extension division to meet the calls from every part of the state for lectures of this sort.

The Michigan health education program is in some respects unique, according to Alice L. Lake, who supplied the information given. Inquiries from all parts of the United States and from Canada have been received by the extension division with reference to the Michigan program. Judging by the correspondence received from other parts of the country, the time is not far distant when every state will inaugurate some sort of health education program, modeled in whole or in part after the Michigan plan.

MINUTES OF THE MEETING OF THE JOINT COMMITTEE ON PUBLIC HEALTH EDUCATION

Held at Grand Rapids, April 16, 1925

Present: Doctors Dodge, Biddle, Jackson, Warnshuis, Huber, Henderson, Gibson, Werle, and Miss Annie Coleman.

Dr. Dodge, temporary Chairman.

1. Reading of the minutes of the Battle Creek meeting on January 14, 1925.

2. Election of Chairman to fill the place made vacant by the death of Dr. Burton. Dr. Cabot was elected as Chairman of the Joint Committee for one year.

3. Report of the Committee consisting of Doctors Dodge, Cabot and Warnshuis, relative to the admission of the Michigan section of the American Red Cross to membership in the Joint Committee. Action deferred until next meeting.

4. Report of the Committee, consisting of Dr. Olin, Mr. Werle and Dr. Sundwall, relative to the preparation of lecture outlines on Tuberculosis. In the absence of Dr. Olin and Dr. Sundwall, Mr. Werle explained briefly the nature of the reports and outlines which his organization was prepared to furnish. It was moved and carried that these outlines be distributed through the Extension Division to those members of the speaking staff whose subjects touched upon Tuberculosis, provided the outlines meet with the approval of Dr. Olin and Dr. Sundwall.

5. Report of the Secretary relative to additional names and subjects for the new bulletin. The list submitted was approved. It was moved and carried that other names and subjects which may come in between the time of this meeting and the date of the publication of the bulletin, shall be subject to the approval of the Secretary.

6. Report of Dr. Cabot relative to the organization and objects of the American Association for Medical Progress, as represented by Mr. Benjamin Gruenberg, Secretary. No definite action was taken.

7. It was moved and carried that a Committee, consisting of Doctors Dodge, Cabot and Warnshuis, be appointed to make a study of the relation of the nursing service of the state to the health service and to report at the next meeting. Moved and carried that this report be made a special order of business for the next meeting, with the understanding that the Committee submit a preliminary written report of their findings to all members of the Joint Committee before October 6, 1925.

8. A report was made by Dr. Gibson, representing the State Dental Society, to the effect that the State Dental Society had appointed Dr. Chalmers J. Lyons of Ann Arbor to represent the State Dental Society on the Joint Committee for a period of three years.

9. Moved and carried that a Committee be appointed by the Chairman to report on the subject of publicity as relating to health matters. Dr. Cabot appointed Dr. Jackson, Mr. Werle and Dr. Biddle as members of the Publicity Committee.

10. It was moved and carried that a Committee be appointed to consider the question of lecture outlines and literature and bibliographies which might be of use to members of the health lecture satff. The Chairman appointed Doctors Henderson, Huber and Sundwall to act on this Committee.

11. It was moved and carried that Dr. Warnshuis be requested to ascertain in what way the Joint Committee may co-operate with the Gorgas Memorial Committee of the A. M. A. especially as relating to the distribution of health literature.

12. It was agreed that the next meeting of

the Joint Committee shall be held in Ann Arbor, Michigan Union, Tuesday, October 6, noon, eastern time.

The meeting adjourned.

W. D. Henderson, Secretary.

THE SPIRIT OF ORGANIZED EFFORT*

The plan, whereby in 1902 our medical reorganization was made to consist of County, State and American Medical Association, must be conceded as not only just but democratic. It affords an interlocking relationship that unites the constituent units an correlates their activities, while at the same time amalgamates and organizes into one large body the profession of the nation. The experiences of the past twenty-three years has justified the wisdom of that plan and has created a solidarity that is so essential to achievement and progress.

As times change, so too, must we change. As new events create new conditions, we in turn must adapt ourselves to new relationships and assume new or extended obligations. Thus is the spirit of organized effort determined and developed. If we acept those obligations, acquit ourselves in their performance then do we meet up to the modern spirit and progress is recorded. Should we fail to so do, retrogression ensues, the organization becomes dormant, and unless aroused, speedily disintegrates and ceases to function.

It becomes imperative then that we, who have been placed in official positions, should pause from time to time, take stock and confer in order that we may determine whether we are causing our official acts to conform to the spirit of present day organized effort. In doing so it is well and essential that we should formulate new movements and activities that progress may be evidenced. That is the purpose of this Conference, which you as County Secretaries and Councilors are attending. Without further introduction or coment I shall proceed to enumerate, for your consideration, those purposes and programs that characterize the present day spirit of organized medical effort.

The first fundamental of medical organization was and still is, the providing of a place and time where members might meet, discuss, relate and appraise medical knowledge, scientific discoveries, experiences and practice. All to the one end for collective and individual improvement and professional ability. That feature embraces the scientific programs of our County Society Meetings. Compliance with this primal fundamental is as essential today as it was twenty-five years ago. It follows therefore that each component unit must constantly exert itself to maintain a high standard for its medical programs in order that your members may ever be abreast of scientific progress. It is the function of the County Unit to keep the ruts of habit filled up and engender amongst local members the desire to remain in the van of modern practice. I desire to urge an increasing alertness to this basic object and advise increasing attention to the formulating of your scientific program. Plan them far in advance with careful thought and consideration of topics, speakers and discussants.

2. As individuals, as a profession, as an organization, the progress of our day no longer permits us to live unto ourselves and within ourselves. Our scientific discoveries and advancement has laid in store for us a vast fund of knowledge. Knowledge which if imparted to the public would go far and do much for the efficiency, physical welfare, happiness and longevity of all humankind. This fund of knowledge, this civic resource is not ours to hold and conceal for selfish purposes.

If we judiciously disseminate it we will retain the mastery that rightly belongs to the profession. Unless we so disseminate it, society will demand its receipt from other sources, that are bound to be created and when it does we shall have forfeited our mastery and our profession of today will be subordinated to higher authorities. That eventuality is certain to occur should we permit ourselves to become so neglegent and irresponsible.

It therefore follows that the second important spirit that should motivate medical organized effort of today is the obligation we have to educate the public as to the truths and benefits of modern scientific medicine. As a State Society we have undertaken this duty as witnessed by our Joint Committee on Public Health Education. Certain ends have been attained. In certain counties splendid progress has been made. A basis has been thoughtfully constructed. As a State Organization, embracing the entire state, the attitude is still characterized with far too much indifference and far too little achievement. A relatively few County Societies concern themselves with this movement, more societies are indifferent and accord scant interest or support. The need presses, and I stress the imperativeness of that need, for every County unit to immediately rally to the support of this work and to become aggressively active. Speakers are available, assistance from the Committee is at hand, the people are alert and eager. County Society sponsorship through an active working Committee and well planned, followed through effort must become the concern and duty of each County Medical Soiety in order that the public may be enlightened as to medical scientific truths and our public obligations remain unchallenged. As Secretaries it becomes your duty to cause your local socety to awaken and to undertake this work with intensified avidity. It is our outstanding, most essential activity. I sincerely

hope you will return home fully imbued to institute this work in your County.

3. The third essential of the modern spirit of organized medical effort is need for providing, in a systematized manner, channels and methods for the conservation of human health. I refrain from commenting upon the needs; the "why fors" and bluntly mention Periodic Physical Examinations for Infants and Adults. To establish the principles by which such examinations become imperative, to formulate an acceptable examination procedure, to standardize evaluations and to bring about every doctor's enlistment in this field of service is a responsibility that modern events and education has placed on medical societies and the profession. The subject is receiving the attention of our American Medical Association, and an examination blank and manual is in course of preparation for individual usage. Certain County Societies in the East, Middle and far West have undertaken the initiative. We of Michigan, must no longer delay in instituting this demand of our modern day.

I have thus briefly and superficially cited three outstanding activities that call for concerted effort on our part. They by no means embrace all that is included in our organizational program. It would consume far too much time were I to enumerate in essential only medical legislative education, hospital and nursing standards, membership personnel, community practices, public clinics, our inter-relationships, post-graduate instruction, and several allied features which properly, but far too often neglected, fall within our scope of organizational objects and duties.

The general appraisal and criticism appears to be justified that we are in the midst of a critical period in our profession's history. We have drifted and been self centered giving little heed to the forces that were amassing around us. We have leaned overly far towards the money pots of Midas and the golden calf bids well to supplant our cherished ideals. We need not hope for any Moses to lead us out from our professional wilderness of today. It is only by the directing guidance of you who are the most important officers of our Societies that we can hope to establish and benefit by the powerful, though now somewhat dormant forces that lie within the scope of our organized medical units. To do so entails time, labor, thought, effort and zeal. You must give much and receive little or no personal reward. You may confidently expect, if you are active, much criticism, cussing and enmity. Oft times you will struggle alone, depressed and inclined to toss up the sponge. If you do, of course you fail. If you persist with fixed determination you will win and the reward will be the personal knowledge and satisfaction that you have labored in a most worthy cause.

I am not seeking to arouse false or transient enthusiasm. I am earnestly pleading to awaken a consciousness that will convince each of you that heavy burdens rest upon you as County Secretaries. I am hopeful that you will depart from this conference with a fixed, unswerving purpose and determination to return to your County Society and promptly undertake to:

1. Bring about better scientific programs for your regular meetings.
2. Foster, inspire and institute with the aid of selected members, an increasing number of public meetings for the education of the public in regard to scientific medicine.
3. Adopt and develop a plan of periodic physical examinations.
4. To join with and assume directing control of all public health work, clinics and hospitals in so far as medicine is involved.
5. To enlist and interest all the eligible members of the profession in your County in the work of your County Society.
6. To cause your Society to enhance the type of medical service in your community.
7. To re-awaken the spirit of organized effort for the attainment of the mastery and honor of our profession.
8. To beget professional fellowship.

These, gentlemen, embrace the essentials of the present day spirit of organized medical effort. For its accomplishment and for your assistance you will find the Council and Officers of your State Society ever ready to respond, in so far as it is given to them, to your requests for assistance. Michigan stands foremost in National Medical progress. It remains for each County Society, and each County Secretary to determine if we are to be relegated to the rear ranks. There are peculiar conditions and obstacles in each County. They can be surmounted if you but fixedly determine to do so. May the discussion today assist and inspire you to that type of service.

Editorial Comments

From Wayne County Bulletin

The visit paid us recently by Dr. F. C. Warnshuis, the Secretary of our State Society, will do much to foster a better spirit of understanding between our Society and the State organization.

The relationship between the Wayne County and the State Society, while it has been and will continue to be a harmonious one, still has somewhat of passiveness in it. This is due perhaps to the size and activity attained by our organization, pride in which some of us feel that we can be independent of the State Society and that bolting from that organization would be easily accomplished in the event of any displeasure being incurred. That such a misapplication of power would wreak nothing but havoc can be readily appreciated by all and would therefore be wholly undesirable; but a combination of forces would do much towards the good of all of us.

The visit of Dr. Warnshuis was made primarily to determine just what the State Society could do for Wayne County in the fulfillment of its duty to all county societies and while nothing very definite was decided upon, a feeling of better understanding was created between the two organizations.

It is hoped that the State Secretary will be invited

by our Council more often than in the past in order that this relationship may be more firmly established along thoroughly co-operative and friendly lines.

The American Medical Association, through its Council on Medical Education and Hospitals, which handles the hospital work for the Association, has issued its 1925 revised list of hospitals approved for internships. The list is published in the Journal of the American Medical Association for March 28. It will also appear in the ninth edition of the American Medical Directory, besides being in separate pamphlet form. The list names 524 hospitals that are in position to furnish general internships, such as satisfy the medical colleges and state boards, as well as meet the almost universal demand of medical graduates for at least a year's general hospital experience, practice or specialization.

There were reported 5,059 interns, of whom 3,825 are in the 524 approved hospitals, and 1,234 interns in 2,696 non-approved hospitals. This total of 5,059 interns compares favorably with the 3,669 interns reported in the census of one year ago, the increase being 1,390, or 37.9 per cent. In fact, there are 156 more interns now in approved hospitals than there were in all hospitals two years ago.

When the hospitals began to feel the shortage of interns about a decade ago, they quite naturally resorted to pecuniary appeals and offered salaries, usually ranging from $25 to $100 per month and maintenance. Now the appeal must be made on the basis of educational opportunities offered, rather than financial remuneration. There are still a number of hospitals that pay their interns—and there can be no objection to giving interns some financial help, but hospitals which secure the best interns and most easily, are those whose staffs are known to furnish the best educational opportunities, salary or no salary. The Council on Medical Education and Hospitals also publishes a list of the hospitals that provide approved residencies in specialties for those who have already had a general internship or experience.

By furnishing these lists the Council serves not only those who are seeking an internship or residency, it also contributes much to the good of the profession and the public by encouraging a broad general foundation, both for general practice and for specialization.

Remember, and note on your calendar, that the date for our annual meeting is September 8, 9 and 10th. The place is Muskegon. An impressive and interesting innovation is planned for this year's program. It will be announced in due course. Just now we want you to reserve these dates and plan to attend.

We haven't as a rule, utilized space for "jokes" except to once in a great while reprint an effusion from the "Tonics and Sedatives" grist. But it's spring; maybe you are feeling a little frisky—at any rate, elsewhere, as a filler in this issue you will find a few that we recently ran across.

When some women come to you for advice, or information, they seem to feel, that in order to show you they are interested in what you are trying to tell them, they must interrupt you every half minute and politely call you a liar, by saying—"Zatso?" —"You don't tell me,"—"You can't mean it,"—"Really," and "Is it possible?" Then you feel like saying, "Oh! whatstheuse."

Our Medico-Legal Defense Committee, through it's efficient chairman, is rendering to our members valuable service. The work is difficult, with many complicated details and points of law to be observed. One outstanding difficulty that is frequently encountered is damaging "talkativeness" on the part of the doctor when he is threatened with a suit or served with a summons. Statements made at that time are frequently used at the trial and are detrimental. The advice is again tendered to keep quiet, say nothing and place the facts in our legal committee's hands. They will protect your every interest. Above all, do not talk or make any statement.

Your Editor does not desire to write all the editorials for The Journal. Our editorial columns are open to every member of the Society who desires to contribute. It is your opportunity to utilize this space for the imparting of your views, or for advancing constructive comments and criticisms. We urge that you make use of this space. We desire to have the editorial department reflect the profession's thoughts and views. We solicit and welcome your contributions. Please help us to make a better Journal.

Chiropractic legislation was also defeated in the New York legislature. Splendid work done by the organized profession of New York exposed the injustice of this type of favoritism and preying upon the health of the people. It would seem that the policy should be to vigorously. prosecute these law violators who exercise a damaging influence upon health equally as great as does the "bootlegger."

The A. M. A. meeting in Atlantic City, the week of May 25th, should induce a goodly number of Michigan Fellows to attend. With ample hotel accommodations, satisfactory meeting places, a resort furnishing a variety of diverse ammusements and the fraternal spirit always manifested are apparent inducements and should serve to bring out a large attendance. Plan to attend for you will not regret it.

Wayne County Medical Society is composed of some 1,400 members. This almost is equivalent to being half of our state membership. These members in Wayne have most loyally met our increase in state dues. Certain reasons and plans were set forth as the basis for an increase in dues and extended activities were outlined. The Council has been actively engaged in advancing our organizational work and enhancing the value of membership. We have been greatly concerned as to how our State Society could be of renewed and increased value to Wayne County. The problem has been considered from many angles. Considerable correspondence has been had with the President and the Council of Wayne County. On March 30th, we had a conference with the Wayne County Council with a view of determining wherein we as a State Society could render service. It was recognized that the Wayne County Society holds splendid weekly meetings. It was further recognized that the Society is acquiting itself in a most commendable manner of its organizational obligations. Cognizance was also taken of the fact that by means of regular clinics, foundation lectures, instruction courses and special societies the medical men of Wayne are afforded excellent opportunities for scientific enlightenment. It seemed that any effort on the part of the State Society to add to this already crowded program would be of minor value. That is the present situation. The result of the conference, and that is what we desire to get over to all our members, was the expression of Wayne's Council set forth in these words: "The question is not what the State Society can do for Wayne, but rather, what more can Wayne County do for the State Society." That was a most loyal

expression, revealing in a broad, frank, unselfish manner, Wayne's interest in our State Society. We who are out in the state are most grateful for this fraternal spirit of brotherhood. In conjunction with the Program Committee it is purposed to participate in some of the weekly meetings of the Wayne Society. However, we salute the members of Wayne County and voice our thanks for their considerate attitude.

Chiropractic bills were defeated in the Indiana legislature. As soon as the public obtains information as to this cult's lobbying for recognition and seeks state endorsement for uneducated, unscientific individuals who desire to force their quackery upon the sick, their legislative machinations end in failure. Until the public is fully informed it remains the public duty of the medical profession to expose these cultists. That means that you, doctor, as an individual, must utilize every opportunity to pass out scientific facts to those with whom you come in contact.

County Secretaries are urged to again interview delinquent members and secure their re-instatement. Under ruling of the House of Delegates the names of all delinquents have been removed from our mailing list. They no longer receive The Journal and are without the medical-legal protection of our Defense Committee.

What has become of the doctor's gold-headed cane? The day was when no successful, active doctor was not the weilder of a cane whenever he appeared in public, or participated in community affairs . It was recognized as his mace, denoting his profession. It was more a part of his dress than the old silk tile. Somewhere within late years we have lost it. Will someone tell us how it came about? No, we are not endeavoring to resurrect it, or undertake the starting of a movement that will re-institute its usage. We are just a little curious and are inviting comments and recollections upon the "Doctor's Gold-Headed Cane." Will the muse inspire several and cause them to send us their thoughts for publication?

Among Our Letters

NOTE.—*This department is the open forum of our members. Your communications and discussions are welcomed. Anonymous communications cannot be accepted, though at times names may be omitted by the Editor. Personalities will not be printed and responsibility for opinions is not assumed. We invite your interest in this department. Address: The Editor, Journal, Michigan State Medical Society, Powers Theatre Bldg., Grand Rapids, Mich.*

A REPLY TO DR. SMITHIES

To the Editor:

There should be no need for me to point out that cool deliberation, statement of fact and close adherence to the scientific issues involved are, in this age of reason, the accepted methods for learning the truth.

The letter appearing in the Journal of the Michigan State Medical Society for April, 1925, over the name of Professor Smithies concerning my article, "A Diet for Peptic Ulcer" (Journal of the Michigan State Medical Society, January 1925), is therefore unusual and I shall answer it only insofar as scientific facts are involved.

In the first place (and I raise this issue apologetically) the name of the great Russian physiologist is spelled PAVLOV, and not Pawlaw, as Professor Smithies insists. To prove this point it is only necessary to refer to "The Work of the Digestive Glands" by Pavlov, (translated by W. H. Thompson, London, 1910), and also to the signature of Professor Pavlov in the biography by Professor Boldyreff (Bulletin of Battle Creek Sanitarium and Hospital Clinic, Battle Creek, Michigan, Vol. XIX No. 1, p. 5, December 1923).

Now I will proceed with the real questions at issue in my article. Smithies states, "In America we are to assume that egg excites gastric secretion." I need only refer Professor Smithies to Pavlov's book already quoted. On page 116 Pavlov states "Fluid egg white in Lobasov's hands showed no stimulating effect. If it be prevented, however, from escaping into the bowel a secretion begins after about seventy minutes." Bear in mind this is the unique property of fluid egg white, and not fluid whole egg, or whipped white, which Professor Smithies no doubt has in mind. Again (loc. cit.) "the absence of effect (secretion) in the earlier experiments, is no doubt due to the rapid passage of the egg white into the duodenum."

Smithies doubts that fats depress the acidity of the chyme. Pavlov (loc. cit. pp. 119, 121) states "no stimulating effect on the gastric glands was at any time obtained" from fats and "after a careful examination of all the facts, we are compelled to adhere to the hypothesis" that the lack of secretion following fat ingestion is due to "reflex inhibition of the secretory process." McLeod (Physiology and Biochemistry in Modern Medicine Mosby 1918) says on page 440, "Fat has a distinct inhibiting influence on the direct secretion of gastric juice." Further references (requested by Professor Smithies) are:

1. Lobasov (Ref. Arch. f. Verdauungskr. 1896.2.499).
2. Wolkowitch (ref. Arch. f. Verdauunskr. 1898.-4.380).
3. Lange (D. Arch. f. Kl. M. 1903.78.302).
4. Akimow-Peretz (Ref. Arch. f. Verdauungskr. 1898.4.397).
5. Backman (zschr. f. Kl. M. 1900.40.224).
6. E. Boas (Virch. Arch. 104.271).
7. V. Aldor (Zschr. f. Physick. Diat. Ther. 1.117).

All these authors have shown, experimenting on men and dogs, that ingestion of fat depresses the acidity of the stomach.

Professor Smithies also challenges the statement in my article that fats, upon reaching the duodenum close the pylorus and also denies that there is regurgitation of the duodenal contents into the stomach aiding the fixation of acid. The following extracts from Pavlov (loc. cit. page 188) may be more convincing: "It has been shown by the experiments of Lintvarev, that fats, fatty foods and soaps produce a reflex closure of the pylorus by contact with the duodenal mucous membrane, similar to that of acid and quite apart from a possible mechanical effect." This phenomenon has also been observed by Mering and Marbaix (La passage pylorique. La Cellule 1898. XIV. 251). Further, (Pavlov loc. cit. page 190). "Both the fatty acids and the hydrochloric acid produce their effects indirectly by causing a free secretion of bile, pancreatic juice and succus entericus, which neutralize them, whereupon the pylorus opens and the fluids pass into the stomach. The foregoing investigations were carried out by Boldyreff and have been confirmed by Dr. Arbekov." Many other authorities confirmed this, among which I would like to mention:

1. F. Best and Cohnheim "Ueber den Ruckfluss der Galle in den Magen bei Fettfutterung, (zschr. f. Physiol. Chemie 11910 LIX page 125).
2. B. P. Babkin and H. Ishikawa "Zur Frage ueber den Mechanismus der Wirkung des Fettes als secretorischen Erregers der Bauchspeicheldruse" (Pflug. Archiv. 1912. CXLVII 324).
3. Volhard (M. M. W. 1907.9).
4. S. Mintz (D. Arch. f. Kl.M. 1911.CIV. 481).

Professor Smithies has no right to claim priority in introducing the scientific ulcer diet. As seen from the letter of Professor Jarotzky to J. A. M. A. (February 28, 1925 Vol. 88, pp. 696) the Jarotzky diet was introduced in 1910 (Russky Wratch 1910 51. page 1979), while according to Smithies' own assertion, he introduced his regime in 1917.

Finally I have no intention of denying to Professor Smithies any credit for an ulcer treatment, which he may have independently evolved according to his own ideas of gastro-intestinal physiology. I still maintain, however, that Dr. Coleman's regime is the first attempt in this country to adapt the treatment of gastric ulcer to the laws of physiology.

That Professor Pavlov is the dean of modern gastro-intestinal physiologists, I think, even the most loyal American will not dispute.

A. Altshuler, M. D.
Detroit, Mich.

April 7, 1925.

The Journal of the Michigan State Medical Society:
Grand Rapids, Michigan.

Gentlemen:

The Mississippi Valley Conference on Tuberculosis will be held in Lansing, Michigan, on September 15th, 16th and 17th.

We would greatly appreciate having you mention the conference and the dates in your publications, in order that other organizations planning to hold conferences this fall will take the dates of the Mississippi Valley Conference on Tuberculosis into consideration.

We thank you for this courtesy.

Yours very truly,
Theo. J. Werle,
Executive Secretary.

X-RAY MACHINES AND RADIOS

Editor of The Journal of the Michigan State Medical Society,
Grand Rapids, Michigan.

You may recall that on December 24, 1924, you submitted an extract from a letter you had then recently received from Dr. Jesse O. Parker of Owosso, Michigan, relative to interference with the receiving and broadcasting of radio communications by the use of Dr. Parker's X-ray transformer. From Dr. Parker's letter it appeared that the Supervisor of Radio, Department of Commerce, Navigation Service, Detroit, Michigan, had interested himself in the situation to the extent of communicating with Dr. Parker concerning it. I therefore concluded that the best thing to do was to take the matter up directly with the Secretary of Commerce, Washington, and accordingly did so.

In the usual course of official business, my letter to the secretary was referred to the Bureau of Navigation, and under date of January 15, I received a reply from the Commissioner of Navigation. The gist of his letter was as follows:

"This office has received numerous complaints of interference with radio broadcast reception said to be caused by X-ray machines. Such complaints have been referred to the Radio Supervisors in the field offices for investigation.

"It has been reported that in some cases the interference has been eliminated by screening the room in which the apparatus was being used."

The Commissioner referred me for "more definite information as to the specific cases and the action taken, as well as the results accomplished," to nine Supervisors of radio, scattered through the United States, from Boston to San Francisco. It occurred to me, however, that if I should communicate with these several supervisors of radio I might merely stir up trouble, by calling their attention to the alleged interference and possibly making them feel that they ought to take some action regarding it. So I did not write to them. I suggested to the Commissioner of Navigation, however, that in view of the numerous complaints received by his office, the entire matter might with advantage be referred to the Bureau of Standards, which is a branch of the Department of Commerce, for investigation and report, "not only for the guidance of your office (the office of the Commissioner of Navigation) but for the information and guidance of users of X-ray apparatus generally." To that letter, the Commissioner replied, in part, as follows:

"The Secretary of Commerce has no control over interference with radio broadcast reception caused by electrical devices other than radio transmitters.

"Where interference is reported the source of which is unknown investigation sometimes develops that it is not produced by a radio transmitter, but from some other cause, in which case if the cause is located, our inspectors usually co-operate with the owners of the interfering device in an effort to remedy the condition. It sometimes happens that a remedy which is effective in one case does not remove the trouble in another."

The matter was, however, referred to the Bureau of Standards.

Under date of March 12, 1925, the Director of the Bureau of Standards submitted a succinct—and to some, I presume, lucid—statement of the situation, a copy of which I enclose. So far as we are concerned, the essential facts seem to be that interference to radio reception may be caused by X-ray apparatus, that there is frequently difficulty in preventing such interference, and that the Bureau of Standards has—

> "been deterred from embarking upon the comprehensive study which the situation really demands by the lack of funds requisite to undertaking a large amount of work additional to the numerous projects we have on hand. Solutions are gradually being worked out for the difficulties of this type in radio reception, but there is no doubt that such solutions could be greatly expedited by a scientific study of the causes and possible remedies for the several types of interference."

The situation may be summed up, it seems to me, as follows: (1) Electrical discharges from X-ray apparatus may interfere with radio broadcasting; (2) the causes of such interference are various, discovery of the cause in any particular case may be difficult, and the application of a remedy for the cause, if it be discovered, may be impracticable; (3) there is no definite solution of the difficulty in sight—primarily because resources for the scientific study of the causes and of possible remedies for the several types of interference are not available; and (4) the user of X-ray apparatus has as much right to "the air" as has the radio broadcaster, and is not under the control of the Secretary of Commerce.

A desire to keep the good-will of his fellow citizens, as well as the ordinary instincts of a physician, will undoubtedly lead the medical users of X-ray machines to co-operate to the limit in avoiding interference, so far as it may be avoidable. Apparently, however, they may insist on their rights, and use their X-ray machines for their professional ends, even though interference does occur. I am in doubt, however, as to the best course to pursue with respect to this matter, and therefore I submit it to you, with a view to having you consider it and advise me, or take such action as you deem proper. The doubt in my mind is as to whether it is best that the medical profession do nothing, allowing the situation to develop, and meeting difficulties if and when they arise, or better that the medical profession endeavor to stimulate research, either by the government, or by private agencies, possibly the makers of X-ray apparatus, to find means of avoiding the difficulty. Frankly, I am inclined to favor the waiting policy. I feel sure that the radio broadcasting interests will get busy and find a solution, if the situation becomes serious enough.

Wm. C. Woodward,
Executive Secretary,
Bureau of Legal Medicine and Legislation.

HARD LUCK IN MANISTEE

Editor The Journal of the Michigan State Medical Society.

Due to three doctors being sick and in the hospital, our March meeting was cancelled. At the time of our March meeting Doctors E. M. Keough and H. D. Robinson, both veteran practitioners, were at Mercy Hospital, Manistee, the one operated on for a ruptured appendix, the other for an obstruction of the bowel requiring resection of about 18 inches of gut. Since neither was a good surgical risk, we felt greatly worried. However, both made speedy and favorable progress for about 12 days. At that time Dr. Keough, after being up and about for two days, was found in his room unconscious, due to a cerebral hemorrhage. Dr. Robinson is back at work, but Dr. Keough is still very ill. We fear his paralysis will be permanent and our prognosis as to life is very guarded. The third physician "knocked out" was Dr. Lee Lewis, one of our E. E. N. & T. men. Dr. Lewis was in a Grand Rapids hospital preparing for a thyroidectomy, made necessary by a severe hyperthyroidism. Dr. Lewis is back in Manistee, but confined to his home. I would say that is a rather remarkable record for so small a Society as our own.

Our April meeting will be held Thursday, April 16th, with a supper at Mercy Hospital, followed by a lecture and demonstration by the courtesy of Fischer Company.

As to the meeting of County Secretaries, I am sure the Society will not care to pay my expenses, and with several men off the job, it is a little hard to get away. Obstetrics seems to be wished off on me, and with two cases scheduled for the 22nd, one for the 16th, and one for the 26th, I think I had better stay "close to home."

We have our regular monthly meetings every third Thursday. If the State Society is planning any more sectional clinical conferences, I wish to assure you that Manistee is far famed for its hospitality and we will be glad to act as hosts to such a meeting.

Regretting that I can't attend your meeting of Secretaries, and requesting that you send me a copy of the important proceedings of the meeting.

Very sincerely,
J. F. Goeke, M. D.
Secretary-Treasurer,
Manistee County Medical Society.

Editor of The Journal:

The Council of the Wayne County Medical Society recently authorized the publication of a daily Clinical Bulletin for Wayne County. The Bulletin will be published beginning May 1, 1925. As we wish to give the greatest publicity possible throughout the state so that visiting doctors in Detroit can obtain the Bulletin, I wonder if the State Journal would be kind enough to carry a notice of how the Bulletin carried throughout the year in a prominent place in the may be obtained in Detroit. If such a notice could be Journal it would be of great convenience for visitors in the city and we will make every effort to provide them with all the information possible regarding not only the daily program but also post-graduate work.

Very truly yours,
Henry Spencer, Director,
Detroit Clinical Bulletin.

WORLD WAR DINNER

The medical officers who saw service during the World War will take advantage of the annual meeting of the American Medical Association at Atlantic City to have a reunion and dinner. The officers of the Association of Military Surgeons are heartily behind this meeting and will take an active part in it. It will be a rare opportunity for military surgeons to get together and renew old associations and pleasant memories. Tickets ($5.00 each) may be obtained of Colonel Burt R. Shurly, M. O. R. C., U. S. A., 62 Adams avenue, West, Detroit, Mich. The time and place will be Wednesday, May 27th, at 7 o'clock, at the Ritz-Carlton hotel, Atlantic City. The task of the organizers will be much lightened if reservations are made early.

Committee on Arrangements.

Editor of The Journal:

The Alpena Medical Society desires me to extend through you, their thanks to the State Society for the very fine program supplied for the Post Graduate Medical Conference held in Alpena the second of April. As a result of this conference our Medical Society holds a higher place in the minds of the citizens of Alpena..

Truly yours,
C. M. Williams, Secretary.

Editor of The Journal:

The Samuel D. Gross Prize of the Philadelphia Academy of Surgery for 1925, amounting to Fifteen Hundred ($1,500) Dollars, has been awarded to Dr. John Alexander, Department of Surgery, University of Michigan Medical School, for his essay entitled, "History, Present Practice, and Proposed Reform of the Surgical Management of Pulmonary Tuberculosis."

The Trustees will be very glad if you can make this announcement in your Journal.

Very truly yours,
William J. Taylor,
Trustee Samuel D. Gross Prize.

Editor of The Journal:

To enlist interest and influence against anti-vaccinationists and anti-vivisectionists and others who are making attacks upon the health laws of the country, it is necessary that prejudice and misleading argument be overcome by giving the people reliable health information.

A good deal of this information is contained in HYGEIA, the health magazine published by the American Medical Association. Recognizing this fact, medical societies are sending this magazine

to those who are trying to secure proper legislation for the protection of public health.

Two hundred and seven members of the New York State Legislature are receiving HYGEIA as a gift from the State Medical Society, "with the hope that they will make a study of the contents which bear largely upon health problems." (See the article by Ernest Harold Baynes in the April issue of HYGEIA which has been mailed under separate cover.)

In Pennsylvania, the State Medical Society is sending HYGEIA to two hundred and sixty legislators. The Wisconsin senators and representatives are also receiving this publication through the State Medical Society. In Indiana the members of the State Society have sent one hundred and sixty single copies of HYGEIA to their legislators. We should like to add your Society to this list.

By sending HYGEIA to your senators and representatives you will provide them with valuable information on health questions that may come up at the next session of your Legislature. Our group rates make it possible for societies to subscribe to HYGEIA at a low cost. These rates are given on the green slip attached. If you will advise us by return mail the number of copies you need, we shall be glad to reserve them for you. The names and addresses of your legislators may be sent in later.

Let HYGEIA help you in your fight to secure legislation that will promise protection to public health.

Very truly yours,
American Medical Association.
F. V. Cargill,
Circulation Manager, HYGEIA.

Editor of The Journal:

I have had several inquiries from members of the profession from various parts of the state relative to Post Graduate work in Anatomy. If you will, I would appreciate your including in the "News Notes" the statement that I will offer courses in Surgical, Medical and Neuro-Anatomy at St. Mary's Hospital, Detroit from June 22 to July 18th, 1925.

Physicians or others desiring the course should address me at the Detroit College of Medicine and Surgery.

With best wishes and regards,
Yours very truly,
C. F. McClintic,
Director Department of Anatomy.

State News Notes

COLLECTIONS

Physicians' Bills and Hospital Accounts collected anywhere in Michigan. H. C. VanAken, Lawyer, 309 Post Building, Battle Creek, Michigan. Reference any Bank in Battle Creek.

NURSES' private home, invites convalescents and invalids; best of care, fine location. R. Rs. N. Y. C. and Interurban; best of references given. For particulars write Bessie Bileth, 566 Ely Street, Allegan, Mich.

WANTED: Salaried Appointments for Class A Physicians in all branches of the Medical Profession. Let us put you in touch with the best man for your opening. Our nation-wide connections enable us to give superior service. Aznoe's National Physicians' Exchange, 30 North Michigan, Chicago. Established 1896. Member The Chicago Association of Commerce.

A PRACTICAL course in Standardized Physiotherapy, under auspices of Biophysical Research Dept. of Victor X-Ray Corporation, is now available to physicians. Offers a highly practical knowledge of all the fundamental principles that go to make up the standards of modern scientific physiotherapeutic work. Course requires one week's time. For further information apply to J. F. Wainwright, Registrar, 236 So. Robey St., Chicago, Ill.

COLLECTION SERVICE

AMERICAN MEDICAL BOARD OF ADJUSTERS, First National Bank Bldg., Chicago. Guaranteed *Delinquent* Collection *Service*. Anywhere U. S. A. (Medical Profession Exclusively). Debtors pay you direct. Litigation avoided. Adjustments encouraged. No "Agency" methods. Financially responsible. WRITE!

WANTED—The Michigan Department of Health requires the services of a physician for field service in connection with the prevention and control of communicable disease; opportunity for epidemiological study, and for advancement; initial salary $3,000 yearly and traveling expenses. Address Deputy Commissioner, Michigan Department of Health, Lansing.

Dr. L. Frank Rice of Owosso, died at Memorial Hospital in that city on March 17, 1925.

Dr. D. E. Welch, Grand Rapids, has returned from California.

Dr. R. J. Hutchinson, Grand Rapids, has returned from a vacation, spent in California.

The staff of St. Lawrence Hospital, Lansing, conducted a clinic on April 14th.

Dr. W. T. Dodge, Big Rapids, has returned from a winter spent in Florida.

Dr. George W. Crile of Cleveland, was the guest of honor of the Ingham County Society at its meeting in Lansing; on April 24th.

The new Butterworth Hospital, Grand Rapids, will be opened during the last of May for the reception of patients. The new building will have 270 available beds.

Major Cyril K. Valade, Med.-Res., 814-15 General Necessities Bldg., Detroit, is assigned to General Hospital No. 17 as assistant chief of surgical service. (The above was taken from special orders No. 76 Hdq. 6th Corps Area, Chicago, Ill.)

Dr. Hugh Cabot, Ann Arbor, was elected to the chairmanship of our Joint Committee on Public Health Education, succeeding the late Dr. Burton. The Committee held its regular meeting in Grand Rapids on April 16th.

Battle Creek is to have a new general hospital, made possible by the gift of Mrs. L. Y. Post Montgomery. The hospital will be administered by the Sisters of Mercy and will be open to all physicians

of good standing. All modern conveniences will be provided and work will be undertaken in a few months.

The next examination conducted by the American Board of Otolaryngology will be held at the Ambassador hotel, Atlantic City, on Tuesday, May 26th at 9 a. m. Application blanks may be obtained from Dr. H. W. Loeb, Secretary, 1402 South Grand Boulevard, St. Louis, Missouri.

Chalmers J. Lyons, D. D. Sc., of Ann Arbor, has been appointed by Governor Groesbeck as a member of the State Advisory Council of Health, taking the place of Dr. Frank M. Gowdy of St. Joseph, whose term expired. Dr. Lyons is Professor of Oral Surgery in both the Medical and Dental schools of the University of Michigan, and is a Past President of the Michigan State Dental Society.

Dr. B. R. Shurly of Detroit, in conjunction with others, is perfecting the arrangements for a dinner for all medical officers who served during the World War. This dinner will be held at Atlantic City, at 7 p. m., on May 27th, in conjunction with the A. M. A. meeting. The service will be at the Ritz-Carlton hotel. The Surgeon-General of the Army and Navy and Brigadier General Finney will be the guests of honor. All ex-officers are cordially invited and it is sincerely hoped a good representation from Michigan will find it possible to attend.

Our Society Business and Activities

HARVEY GEORGE SMITH
EXECUTIVE SECRETARY

NOTE: This Department will each month contain a discussion and report of our Society work and planned activities. Your interest and correspondence as to your problems is solicited.

THE ALPENA POST-GRADUATE CONFERENCE

The Alpena Post-Graduate Conference set a record of completeness in post-graduate conferences. The seven previous conferences each added information as to what methods gave best results in the conduct of conferences. Alpena added to all the previous information by not only excelling in some single attainment such as a successful scientific program or an evening public meeting but by demonstrating that practically all factors that make up a city and a community are interested in scientific medicine and look to it for co-operation, advice and treatment in the preservation and care of the health of the people. The Rotary Club of Alpena was host to all the physicians of Alpena and visiting physicians at luncheon served by the ladies of the Congregational church. The Alpena County Medical Society was host to all visiting physicians at dinner, which was served by the ladies of the Episcopal church in the parish house. The parish house was the meeting place for the scientific sessions of the conference especially arranged for the doctors. The Parent-Teachers Association took over the entire responsibility in planning and arranging the meeting for the public and the Alpena News gave publicity by writing a number of front page articles to inform the public, the community, of the fact that the doctors were holding a meeting for the purpose of advancing their own knowledge for the good of the community. The public was informed on its own personal health by Dr. Hugh Cabot, dean of the college of the University of Michigan.

The post-graduate conference really meant a medical day for Alpena. So much medical knowledge had never been let out before in its history. On every corner one could hear the laymen say, "Oh, yes, the doctors are having a big meeting today." The churches knew about it, the city council, the parents of the boys and girls were all informed by a special written invitation sent to each home. The science of medicine was common talk by the people of Alpena. It will remain a fact.

For the first time since the post-graduate conferences have been started in Michigan has a Rotary Club entertained the physicians. The fifty Rotarians and the twenty-five medical men rubbed shoulders, not professionally, but as men, citizens of the same city; and being a citizen is, after all, the real privilege of every American, irrespective of business or profession. The fact that luncheon and dinner were served by the ladies of two churches to one hundred and forty people meant that at least three hundred homes contributed food and showed a direct interest in the science of medicine.

The meeting for the public, especially arranged by the Parent-Teachers Association of the city of Alpena, was an unusual success. It was executed perfectly. The president and secretary of the County Medical Society conferred with the officers of the Parent-Teachers Association and asked if they would like to take part in arranging for a public meeting. They replied by asking if they might not take over the entire responsibility for the meeting. Their wishes were granted. With a community spirit they accepted their task and with the idea that the community must know. There was no suspicion, there was no antagonism, but there was friendship and fellowship. The new

auditorium of the high school was filled, five hundred people being present. The high school orchestra began the program by a series of selections, the president of the Parent-Teachers Association welcomed the doctors of Alpena and visiting physicians and introduced the chairman of the evening, the president of the Medical Society. Dr. Hugh Cabot gave his lecture on the "Germ Facts of Disease and Their Relationship to the Community and the Individual." Mayor DeFoe in a few carefully chosen words, stated that the physicians of the Alpena County Medical Society had and were always ready to give their best service at any time the city called upon them, either in crises or in normal periods.

At the close of the meeting the members of the Parent-Teachers Association entertained all present by serving coffee, sandwiches and cakes and by being hostesses to the hundreds of people present. It was a big task, but it is one of those community activities that helps to make every one look for the best in the other fellow, in the organizations and institutions and shows the way, how best to serve the community and its institutions.

The Alpena post-graduate conference was a success for the following reasons: The officers of the Alpena County Medical Society were wise, careful and aggressive; the scientific program was exceptionally satisfactory to the thirty physicians present; the churches, the Rotarians and the city council participated by giving direct co-operation; the Parent-Teachers Association arranged the public meeting for the purpose of better serving their community and the Alpena News gave general publicity to all the residents of Alpena and surrounding country. In all, the spirit of friendship and fellowship was dominant. The whole city increased its knowledge of scientific medicine. Progress is the result.

The program consisted of the following:

DISTRICT POST-GRADUATE CONFERENCE

Trinity Parish House, Alpena, Mich., April 2, 1925.

12:00—Luncheon—Congregational Church.
Alpena Rotary Club, host to visiting physicians.
Short Talks—Harvey George Smith, Executive Secretary; Hugh Cabot, M. D., Dean Medical School, Ann Arbor, Mich.

1:30—Opening Statements—
Thos. H. Van Leuven, M. D., Councilor, Presiding; Samuel Thos. Bell, M. D., Alpena County Medical Society; C. M. Williams, M. D., Secretary Alpena County Medical Society.

1:45—Physical Examinations—
Phil L. Marsh, M. D., Ann Arbor, Mich.

2:25—Renal Surgery—
Hugh Cabot, M. D., Ann Arbor, Mich.

3:10—Diabetes—
Phil L. Marsh, M. D., Ann Arbor, Mich.

4:00—Gall Bladder and Ulcer Surgery —
Hugh Cabot, M. D., Ann Arbor, Mich.

4:40—Discussions.

6:00—Dinner at Trinity Parish House.
Evening Meeting—High School Auditorium.

8:00—"The Preservation of Your Personal Health"—
Hugh Cabot, M. D., Ann Arbor, Mich.

9:30—Reception by Parent-Teachers Club to Hugh Cabot, M. D., and all visiting physicians.

SUGGESTION AND SCIENTIFIC MEDICINE

"I don't think we know how to use folks in helping to spread the knowledge and use of scientific medicine. We think we are the whole thing," is what one medical man said to another not long ago in this state of Michigan. The other agreed and told this story from his experiences.

"Just a year ago a community not far from this city was having an epidemic of diphtheria, not a serious one, but one case was followed by another, there were quarantined homes, there were very sick children, and luckily, none died. There was opposition to any suggestion of the physicians to have all the children of the community immunized. "Never," was the reply of the folks. It seemed hopeless, when one day a word was dropped to one of the leading residents. The result was that the whole community began to see the error of its ways. It was told to them by one of their own people, one in whom faith was dominant and one to be trusted. A meeting was arranged at the school house, physicians were secured and seventy-eight children were immunized three successive times and not a single parent failed to bring his child one of the three times.

What a splendid story of the correct way to secure the complete co-operation of the folks, the people of communities to further the science of medicine for the best interests of the health of the people. Every physician has this same opportunity, every day, to come in contact with right individuals who will always be the friends of scientific medicine because they see justly and intelligently.

This is a simple little story, but at the same time is an excellent example of social interaction, the value of suggestion, a factor as indicated by the first physician in this story that is neglected or one that we do not know how to use. What is suggestion? In negative terms it is not argumentation, it is not declamation, it is not attention. The field is so extensive that an exact definition is difficult of formulation. An essential element of the concept of suggestion is a pronounced directness of action. Whether a suggestion takes place through words or attitudes or impressions or acts, whether it is verbal or concrete, makes no difference so long as the effect is not attained through logical conviction. Suggestion is immediately directed to the mind by evading personal consciousness. It is a process of infection of ideas, emotions, feelings and psychophysical states. Or, by "suggestion," is to be

understood that type of direct inoculation of the mind of an individual with ideas, feelings, emotions, which evade his "ego," his personal self consciousness and his critical attitude.

Suggestion is a means of securing true promoters, propagandists, educators for the science of medicine, for the folks of every community. Because of his profession the physician is best qualified to give the suggestions that will make for a better understanding by the public of scientific medicine. Let not your interest in medicine become narrow, personal. Remember that whatever you may do, you are a social being, a member of a group, and the group expects you to be a part of it by making suggestions that will benefit both it and the individual. Suggestion is not a theory but a fact. Try it with wisdom and note the changing attitudes in your community.

OUR JOB IS WITH US YET

Membership dues are coming in to the state office every day. The Secretaries of the County Societies have been doing their duty in getting in their reports and thus keeping their members from being placed on the delinquent list. The three thousand mark has not been reached, however. And why not, is the immediate question? The Secretaries have done their duty, and the State Society has called attention to membership since January first. In addition the State Society has tried to secure suggestions as to how better to serve the membership and yet no report has come to this appeal. It is evident that the plans and methods of the State Society are concurred in by all. Surely those who have not paid their membership dues are not following Tolstoy's method to end wars —"passive resistance." We might canvass all the reasons available to any organization or all combined and yet we would fail to find the answer to our quest. The answer very likely is to be found in the little phrase, "I'll send that check tomorrow." The rush of business, social engagements, calls at the office and out in the community caring for the sick have carried the well intended promise from January past April 10, or beyond the date for mailing the May journal. Those members are delinquent because of good intentions that were always one day late—tomorrow.

What can *we* do? Yes, and what can *you* do who have paid your dues and who receive this journal? Surely, no Society wishes to become smaller in numbers and less active in the interest of scientific medicine, especially when there is so much work to be done in organized medicine. When the public is waiting to be informed and when it wishes to see the advances of the science of medicine in every town and hamlet of Michigan. Take up action, is the answer. Appoint committees, one, two, three—as many as needed—to personally interview all delinquents. Appoint committees by districts, buildings, or follow any plan that will bring into the membership all the delinquents and all doctors eligible to membership in the Society. Make the canvasses in teams of two or three and the results will be evident at once. When a membership campaign or a finance campaign is contemplated for a hospital or some civic organization, history tells us that the job is done in from five to ten days. We have approximately eight hundred delinquents as this Journal goes to press. Let's make a "cleaning" in the next two weeks and bring in the "tomorrow men" and make them "today men" in membership. Societies, organize for action, appoint committees, or use any plan that will bring results. But act! To make the "tomorrow memberships" today memberships, see them. Bring in the "Tomorrows."

County Society News

HOUGHTON COUNTY

The Houghton County Medical Society held its regular monthly meeting at the Douglas House, Houghton, Tuesday, April 7th, with fourteen members present. After reading of the minutes of the previous meeting and the allowing of bills, the following program was rendered: Dr. M. M. Nilsson of Houghton gave a very interesting talk of his trip to European clinics. Dr. Nilsson specialized in eye, ear, nose and throat while abroad and his discussion of clinics and methods used was very helpful. He also gave some interesting figures of the general industrial conditions in Europe.

Dr. C. C. Stewart next gave a resume of observations at the Mayo clinic. Dr. Stewart spent the month of March at the Mayo clinic and gave a review of surgical and medical work which he saw while there. Some very interesting figures, given at a symposium on duodenal ulcer, were presented. He also reported a symposium on jaundice. Both of these reviews were fully discussed by those present and many questions answered as to methods used.

It was voted by the Society to pay the expenses of the secretary to attend the County Secretaries' conference at Grand Rapids on April 22nd.

The Society then adjourned to lunch.

G. C. Stewart, M. D., Secretary.

IONIA-MONTCALM COUNTY

The spring meeting of the Ionia-Montcalm Medical Society was held Thursday evening, March 19th, 1925, at the Hotel Belding, at 7 o'clock. Only twelve members were present owing to the bad conditions of roads. After dinner the following program was presented:

Subject: "The Pathogenesis of Certain Skin Affections." Speaker, Earl Smith, M. D., of Grand Rapids, Mich.

Dermotology, with its complicated terminology, has always been a bugbear to the practitioners of medicine, but after hearing Dr. Smith present the subject in a clear and concise manner, covering the etiology, pathology and treatment, we were all convinced

that skin diseases, stripped of its long sounding names, could be made quite understandable.

The talk was supplemented by lantern slides showing many important skin lesions. The Society expressed itself as being very grateful to Dr. Smith for presenting this interesting subject.

Dr. Fred Currier of Grand Rapids, Mich., spoke on "Functional Nervous Diseases," giving a very timely and instructive talk on the "anxiety neurosis." This talk was well received by all the members present as was evidenced by the many questions asked.

A rising vote of thanks was extended Doctors Smith and Currier for the excellent program rendered.

F. A. Johnson, Sec'y.-Treas.

GENESEE COUNTY

Genesee County Medical Society met for noon luncheon at Hotel Dresden, Flint, February 18th, 1925.

The speaker of the occasion was Dr. Ramsey, Michigan State Department of Health, Lansing, Mich. His subject was, "Scarlet Fever—Its Control and Practical Value."

Genesee County Medical Society met for noon luncheon at Hotel Dresden, Flint, March 4, 1925.

Speaker, Dr. Stein, Director Research Laboratories, Park-Davis & Co., Detroit. His subject was "Endocrine Glands."

Genesee County Medical Society met for noon luncheon at Hotel Dresden, Flint, March 18th, 1925.

The speaker was Dr. Davis, Professor of Pathology, Detroit College of Medicine. His subject was "Pathology of the Kidney."

Genesee County Medical Society met for noon luncheon at Hotel Dresden, Flint, April 1st, 1925. Dr. Stuart Wilson, Grace Hospital Staff, Detroit, acted as speaker. His subject was, "Subacute Bacterial Endocarditis," with demonstration of specimens.

G. J. Curry, Secretary.

SHIAWASSEE COUNTY

A joint meeting of the Memorial Hospital staff and the Shiawassee County Medical Society was held at Memorial Hospital in Owosso on the evening of April 7th, at which time the dentists of Owosso and vicinity were the guests.

B. S. Sutherland, D. D. S., of Owosso, addressed the meeting on "Some Medico-Dental Problems." Numerous points of interest to both professions were discussed and the discussion which followed was most valuable.

The hospital nursing staff furnished refreshments at the close of the meeting.

W. E. Ward, Sec'y.-Treasurer.

WASHTENAW COUNTY

The regular meeting of Washtenaw County Medical Society was held at Michigan Union, Ann Arbor, Monday, March 30, 1925.

Business: Report of committee on method for securing wider use of toxin-antitoxin.

Mr. Benjamin Gruenberg, managing director of the American Association for Medical Progress, spoke before the Society.

A comparatively small number have paid dues for 1925. These should be paid at once, as the number of our representatives to the State Society depends on the number of members who have paid dues. The dues for 1925 are $12.00, of which the State Society receives $10.00 and the County Society $2.00.

REPORT OF FEBRUARY MEETING

About thirty members attended the dinner meeting held at the Michigan Union, February 25th.

After some discussion of the use of toxin-antitoxin for the prevention of diphtheria, on motion a committee of four, Doctors J. A. Wessinger, Chairman; F. R. Waldron, John Sundwall and E. K. Herdman were appointed to formulate and present to the Society a plan for securing further use of toxin-antitoxin in children.

Dr. Hugh Cabot gave an interesting address on the subject of "Kidney Tumors," and Dr. Preston H. Hickey discussed the X-ray findings in that condition. Dr. Hickey also presented lantern slides illustrating the points in diagnosis.

KENT COUNTY

The regular meeting of the Kent County Medical Society was held on April 8, 1925, at the St. Cecilia Building, Grand Rapids.

Dr. Burton R. Corbus reported several cases of extreme urticania among the nurses of Butterworth Hospital, following the injection of scarlet fever serum "Lilly." Appropriate measures are being taken by the manufacturers to prevent the recurrence of such attacks.

Dr. R. H. Denham reported an interesting case of sarcoma of the oerthebhrae.

Following these reports a "Clinical Pathological Conference on Bone Sarcoma" was given by Doctors Preston M. Hickey and A. S. Warthin of the University of Michigan. Their method is the case method with accompanying lantern slides. Dr. Hickey gave the roentgenological findings, following which Dr. Warthin gave the pathological findings. This constituted one of the most interesting and instructive meetings that the Kent County Medical Society has held this year.

H. T. Clay, Secretary.

OAKLAND COUNTY

A meeting of the Oakland County Medical Society was held April 17th, at 6 p. m., at Pontiac. The following names were proposed and accepted for membership. Dr. Charles D. Strain, Dr. B. A. Spencer, Dr. Francis A. Scott (associate), Dr. John A. Gaston and Dr. G. F. Hamlen, all of Rochester, Mich. This makes us 100 per cent in Rochester, Michigan.

Dr. Hugh Cabot of Ann Arbor, gave a very excellent paper on "The Management of Small Stones in the Kidney and Ureter," illustrated with lantern slides. This was given in Dr. Cabot's usual fine style and was enjoyed and discussed by all. There were about thirty-five members present.

The next meeting will be held in Rochester, May 20th, at 6 p. m., with Dr. H. W. Hewitt of Detroit, as the speaker.

Leon F. Cobb, Secretary.

ALPENA COUNTY

The regular meeting of Alpena County Medical Society was held March 19 at the office of the U. S. Weather Bureau. The local meterologist of the Weather Bureau gave a most instructive paper on the effect of climatic conditions on health. Most valuable suggestions were given regarding temperature and humidity in operating rooms. He contended that the humidity of operating rooms should be about 40°. He showed how the evaporation of fluids about a thermometer lowered the temperature. The lowered temperature of exposed tissues during operation being productive of shock.

Dr E. L. Foley read a valuable paper, summarizing the literature on "Mercurichrome, the New Intravenous Medicine for Blood Infection."

The Post Graduate Medical Conference was held in Alpena, April 2, Doctors Hugh Cabot and Phil Marsh of Ann Arbor giving the scientific papers. Some thirty doctors from the neighboring cities attended the meetings. The Alpena Rotary Club entertained the doctors at luncheon, and the Alpena Medical Society entertained at dinner. The public address was given in the High School Auditorium, Dr. Hugh Cabot addressing a capacity audience on "The Care of Your Personal Health." Following the address, the Parent-Teachers' Club tendered a reception to Drs. Cabot and Marsh in the High School gymnasium. Refreshments were served during the evening. The local Society was more than pleased with the conference.

C. M. Williams, Secretary.

MUSKEGON COUNTY

A regular meeting of the Muskegon County Medical Society was held in the Community Room of the Union National Bank Building, Friday evening, April 3rd, with 39 members present. Dr. F. W. Garber, Sr., gave a pleasing talk on his recent trip. He told of his impressions of New Orleans and the Mardi Gras, described his visit at Havana, the trip about the Canal Zone, to several ports in the United States of Columbia and of his stay in Jamaica.

It having been proposed to amend the Constitution of the Muskegon County Medical Society in the Article relating to "Eligibility to Membership," it was now brought to a vote. Of the 39 qualified to vote, 29 voted for the amendment, 2 against the amendment, one refused to vote and 7 were absent. As 3 more than the necessary two-thirds voted for the amendment, it was declared passed. The article now reads: "Every legally registered and reputable physician residing and practicing in Muskegon County, who is of good moral and professional standing, and who will agree in writing over his own signature to practice non-sectarian medicine only and who will further agree in the same manner not to accept service in any of the so-called Aid Societies in what-so-ever form they be organized, shall be eligible for membership. Furthermore, it is understood that no present member shall engage in any future contract for aid society work, whether written, verbal, or implied, not in existence at the present time. Furthermore, it is understood that when any contract for agreement for aid society work, whether written, verbal or implied, now in existence shall expire, no new contract or agreement shall be made or entered into."

It was voted that the Secretary attend the Secretaries' Meeting at Grand Rapids the 22nd, inst.

P. S. Wilson, Secretary.

GRATIOT-ISALELLA-CLARE COUNTY

The March meeting of the G. I. C. was one of the best we have had in a long time. Dr. Reuben Peterson, Professor of Obstetrics at the University was our guest. His subject was entitled, "Complicated Obstetrics." The doctor read the histories of 12 cases they had recently had at the University Obsterical Clinic and commented on each one individually as he went along.

After this nearly every member wanted to ask the doctor questions, because each one was actively interested in this subject. Altogether it was counted a very profitable meeting, 20 members being present.

E. M. Highfield, Secretary.

OAKLAND COUNTY

The last meeting of the Oakland County Medical Society was held March 20th, 1925, at 6 p. m. We had dinner and were then addressed by Dr. C. E. Vreeland, of Detroit, on "Vomiting, Differential Diagnosis and Treatment." This was a very excellent address, and was enjoyed by all.

The application of Dr. Palmer E. Sutton of Royal Oak, Mich. received and Dr. Sutton was elected to membership. A resolution was passed indorsing our Health Officer's stand in the matter of local chiropractor having been found treating a case of small-pox.

You will find inclosed a newspaper clipping showing how our local city editor kept his friend the Chiropractor's name out of the paper.

Following you will see a copy of the letter from Dr. Neafie to our local prosecutor:

"Clyde D. Underwood,

"Prosecuting Attorney, Oakland County,,

"Pontiac, Michigan.

"Dear Sir:

"In accordance with the State Law requiring the Health Officer to notify the prosecuting attorney whenever he shall know, or have good reason to believe, that there has been a failure to report a dangerous communicable disease, I beg to submit the following information:

"On March 15, 1925, Dr. B. M. Mitchell reported Mrs. Mary A. Hallinan, age 47, of 84 Auburn Avenue as suffering from small-pox. Investigation of this case shows that the woman was taken sick on March 5th, 1925, and that the eruption appeared on March 8th. Mrs. Halliman received chiropractic adjustments from B. A. Te-Poorten. These men failed to give notice of the case to the Health Officer, as required by law.

"In a section of the State Law, relating to the control of communicable diseases, I find the following:

"'And every physician and person acting as a physician, who shall refuse or neglect immediately to give such notice, shall be deemed guilty of a misdemeanor, etc.'

"As a number of people were exposed to this case six days after the appearance of the eruption, and while the eruption was in a pustular stage, I deem this matter worthy of your attention.

"Very truly yours,

Director of Public Health."

L. F. Cobb, Secretary.

INGHAM COUNTY

The following is some additional Ingham County notes for the Journal:

On March 12, 1925, the Ingham County Medical Society met at the St. Lawrence Hospital at 8 p. m. with 25 members in attendance. Because of the absence of the President and Vice-President, on account of sickness, the meeting was conducted by the Secretary. Two committee appointments were read and also a report of the Committee on the Gorgas Memorial Fund was presented. The meeting was then turned over to Dr. Rockwell, chairman of the program committee, who introduced Charles L. Bliss, State Toxicologist, connected with the State Department of Health, who gave a very interesting talk on "Some Personal Experiences In Medico-Legal Cases." In his talk Mr. Bliss gave us some very valuable information relative to the obtaining of autopsy material for the purpose of chemical examination. Dr. Rockwell next called upon Dr. Earl I. Carr, who gave a splendid paper on "Lesser Injuries to the Joints and Bursae." The paper was illustrated with several steriopticon slides and much valuable information was obtained from Dr. Carr's dissertation. Horace L. French, Secretary.

On February 18, 1925, a noon luncheon was held in the parlors of Hotel Downey with 45 members answering to roll call. There was no scientific program arranged, the meeting being called for the transaction of business. A very interesting discussion was carried on by the Society relative to the matter of legitimate publicity for the Society and the Profesion, and a Committee was formed for the purpose of establishing a definite platform for this purpose. A committee was also appointed for the drafting of the resolutions of the Society on the death of President Burton. At this meeting Dr. Wm. Henry Witter of East Lansing was elected to membership in the Society.

On February 19 the Second District Post Graduate Conference was held at Jackson and the following members of the Ingham County Society attended: Doctors Russell, Freeland, Osborn, Bruegal, Brucker, Shaw, McIntyre, Gardner, Hart, Barber, Peacock, McCrumb, Bellinger, Culver, Yerkes, Darling, V. Huntley, Haynes, Wiley, H. A. Miller, Weinburgh, Rockwell, Rulison, Wershaw, F. Huntley, Gauss, Carr, Welsh, Seger, Davey, French, P. C. Strauss, Randall, Pinkham, Niles, Dutt, Wight, Drolette and Christian.

The program was very instructive and interesting and the men all felt that the meeting was well worth while, especially did they enjoy the two talks by Dr. Sped of Chicago.

On February 24, 1925, a dinner-dance given by the Doctors, Druggists and Dentists Society was held at the Elks Temple. Last year this function was given under the management of the doctors, and this year the dentists assumed the greater share of the responsibility and the result was a very pleasant and enjoyable affair.

Horace L. French, Secretary.

MEETING EXECUTIVE COMMITTEE OF THE COUNCIL MICHIGAN STATE MEDICAL SOCIETY

The Executive Committee of the Council met in Grand Rapids, April 2, 1925, at 6:30 p. m.

Present—Jackson, Stone, Corbus, LeFevre and Secretary Warnshuis.

1. The Secretary-Editor submitted the following report:

(a) Bank balance, $14,137.31.

(b) On April 2nd there were 123 more membership dues paid than on April 2nd, 1924, one year ago. This indicated no loss of members because of increased dues.

(c) Nine district clinical conferences have been conducted. The balance will be completed before June. The Upper Peninsula will be covered by three meetings in July and August.

(d) The activities of the Legislative Committee and the situation at Lansing were discussed, and approval accorded of the manner in which the situation was being handled.

(e) Report of Conference had by the Secretary with the Council of the Wayne County Medical Society was reported and Wayne's co-operative loyalty commented upon.

(f) The report of plans for our annual meeting were presented and the program committees' activities approved.

(g) Announcement was made of securing the Mayo Michigan Foundation Lectures for publication in the Journal. Editor also related plans for securing other scientific articles for the Journal. The Editor was instructed to develop these plans.

(h) Approval was made of plans for County Secretaries' Conference on April 22nd, and all Councilors were urged to attend that Conference.

2. The Secretary was authorized to invest surplus cash in safe, negotiable bonds.

3. Secretary was authorized to exercise his best judgment in the matter of clerical assistance in the office.

4. Secretary's plan of writing all delinquent members a personal letter was approved.

5. Secretary was instructed to cause the Executive Secretary to visit all the County Societies during the Spring and Summer.

6. Secretary was instructed to arrange with Dr. Shephard, President of the State Tuberculosis Society for a series of Tubercular Diagnostic Clinics before County Societies.

7. Secretary was instructed to secure, if possible, Dr. G. F. Vincent for our annual meeting.

These several subjects were fully discussed and plans outlined. Adjourned at 10:00 p. m. Next meeting to be held in May at Chairman's call.

F. C. Warnshuis, Secretary.

Among the Books

A Review and Frank Appraisal of Medical Books That are Proffered to the Profession by Publishers.

PATHOLOGY AND BACTERIOLOGY OF THE EYE: E. T. Colling, London Ophthalmic Hospital, and M. S. Mayou, Surgeon, London Ophthalmic Hospital. Second Edition, illustrated. P. Blakiston's Son & Co., Philadelphia, Pa.

This text, first appearing thirteen years ago, is again available in a revised, modern edition. Its

text justifies its title and satisfactorily discusses the bacteriology and pathology of the eye. It impresses one as being a valuable addition to our ophthalmic literature.

ABT'S PEDIATRICS (Volume VI): By 150 specialists. Edited by Isaac A. Abt, M. D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totaling 8,000 pages with 1,500 illustrations, and separate Index Volume free. Now ready, containing 736 pages with 127 illustrations. Cloth $10 per volume. Sold by Subscription. W. B. Saunders Company, Philadelphia and London.

This volume of this master system deals with: Body Temperature, Infectious Diseases, Anesthesia, Childhood Surgery, Malformations, Vulvo-vaginitis and Arthritis Deformans. It represents the high standards of the previous five volumes. It more firmly establishes the authoritative position of this system on pediatrics. No physician can afford to be without these volumes which stand out in our text-book literature.

THE PHYSIOLOGY OF MIND: An Interpretation Based on Biological, Morphological, Physical and Chemical Considerations. By Francis X. Dercum, M. D., Ph. D., Professor of Nervous and Mental Diseases in the Jefferson Medical College, Philadelphia. Second edition, reset. 12 mo. of 287 pages. Cloth, $3.50 net. W. B. Saunders Company, Philadelphia and London.

A discussion of facts that are basic in the functioning of what we speak of as "mind". Presented by an author who has gained distinguished recognition, its deductions are reliable and the physiological functions are admirably elucidated.

SERUM DIAGNOSIS OF SYPHILIS BY PRECIPITATION: R. L. Kahn, CeD., Michigan Department of Health. Cloth, 237 pp. Williams & Wilkins Co., Baltimore, Md. Price $3.00.

The Wassermann test is well known. It is dependent upon technical accuracy. Kahn has simplified that technic and sets forth his studies in this volume. Governing principles, procedure and clinical interpretation are ably set forth and are comprehensive.

The text will be welcomed by all engaged in laboratory work for it is a clear presentation of a test that has been demonstrated as reliable.

PRINCIPLES OF SURGERY FOR NURSES: M. S. Woolf, M. A., B. Sc., M. R. C. S. (Eng.), L. R. C. P. (London), Inspector in Surgery, University of California Hospital, San Francisco. 12 mo of 350 pages, illustrated. Cloth, $3.00 net. W. B. Saunders Company, Philadelphia and London.

A splendid guide for students in hospital training schools.

CHOLECYSTOGRAPHY

E. A. Graham, W. H. Cole and G. H. Copher, St. Louis (Journal A. M. A., April 18, 1925), have found that equally good cholecystograms can be obtained with tetraiodophenolphthalein in much smaller doses as with tetrabromphenolphthalein. This is possible because of the difference in the chemical composition of the two compounds. Sodium tetrabromphenolphalein contains 50 per cent of bromin by weight, whereas sodium tetraiodophenolphthalein contains 61 per cent of iodin by weight. These two factors, on which the opacity to the roentgen ray is largely dependent, favor the use of sodium tetraiodophenolphthalein. Injection of 0.18 gm. of sodium tetraiodophenolphthalein per kilogram of body weight in dogs will produce a roentgen-ray shadow of the gallbladder practically every time. A similar dose of tetrabromphenolphthalein will produce shadows in scarcely 50 per cent of dogs. The lethal dose of 0.27 gm. per kilogram of body weight is the same for the two drugs. The authors are now using a dose of 0.053 gm. per kilogram in the human being for satisfactory shadows. Sections of the human liver do not show any lesions after injections of either tetraiodophenolphthalein or tetrabromphenolphthalein has been alternated in the last forty-two cases for cholecystography. Sodium tetrabromphenolphthalein was used in doses of 5 gm. and sodium tetraiodophenolphthalein in doses of 3.5 gm. for persons weighing 60 kg. (130 pounds) or over. This dose of sodium tetraiodophenolphthalein produced shadows of the gallbladder that were fully as satisfactory as those produced by tetrabromphenolphthalein. The reactions following the injection of sodium tetraiodophenolphthalein were distinctly less marked and fewer in number than after injection of sodium tetrabromphenolphthalein. Sodium tetraiodophenolphthalein can be made into solutions as high as 40 or 50 per cent without difficulty. The authors have arbitrarily chosen a 12.5 per cent solution (8 c.c. of water per gram) for injection. A more concentrated solution than this may produce necrosis of tissue if injected outside the vein. Three and five-tenths grams of sodium tetraiodophenolphthalein, which is an adequate dose for an adult, is dissolved in 28 c.c. of freshly distilled water. The solution is filtered through a fine filter paper and sterilized in a boiling water bath for fifteen minutes. Individual doses are put in ampules. A solution in ampules has been injected without any change in toxity as long as three weeks after preparation. The solution is given intravenously in two doses, one-half apart, in the morning before breakfast, between 7:30 and 9 a. m. Care should be taken not to allow extravasation outside the vein during injection. After oral administration there are certain variations in intestinal tolerance and in the rate of absorption from the intestine. On the other hand, in an intravenous injection, a known dose is introduced into the blood stream. Dosage is a very important feature of the method. The value of the clinical application of the method is as important as a test of function of the gallbladder, as it is a means of visualizing the organ.

ACUTE SYPHILITIC MYELITIS WITH FATAL ASCENDING PARALYSIS

George L. Lambright, Cleveland (Journal A. M. A., April 18, 1925), cites a case which is typical of what can be seen in a typical case of acute syphilitic myelitis with a fatal ending. The diagnosis was made from the history, symptoms, neurologic examination, and performance of the laboratory tests on the blood and spinal fluid. Cord paralysis was obvious from the sudden paralysis of the limbs and sphincters, with disturbance in sensory sensation The symptoms of chill, nausea, girdle pains and back pains are typical of this condition. The early spasticity of the limbs with hyperactive reflexes soon changed to flaccidity and lost reflexes, as the inflammation in the cord progressed. Ankle clonus, and the Babinski and Romberg signs are always present during some stage of the disease, and sometimes Brown-Sequard phenomena are present, also. Trophic ulcers, which are quite often present, were absent in this case.